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M E D A L S.

Utility of
them in Hi-
story, &c.

MEDAL, denotes a piece of metal in the form of coin, such as was either current money among the ancients, or struck on any particular occasion, in order to preserve to posterity the portrait of some great person, or the memory of some illustrious action. Scaliger derives the word *medal* from the Arabic *methalia*; a sort of coin with a human head upon it. But the opinion of Vossius is generally received; viz. that it comes from *metallum*, "metal;" of which substance medals are commonly made.

SECT. I. Utility of Medals in History, and various other Sciences.

THERE are few studies of more importance to history than that of medals; the sole evidence we can have of the veracity of an historian being only such collateral documents as are evident to every body, and cannot be falsified. In modern times, these are found in public memoirs, instructions to ambassadors, and state papers of various kinds. Such memorials, however, are subject to various accidents, and besides commonly remain in the countries where they are first published, and cannot therefore give to the world at large that perfect and entire satisfaction which ought to be derived from genuine history; so that more durable and widely diffused monuments are still to be wished for. Such are public buildings, inscriptions, and statues; but these, excepting a few instances of the two last, are always confined to particular countries; so that medals alone remain as infallible documents of truth, capable of being diffused over all countries in the world, and of remaining through the latest ages.

Various
writers on
medals.

The first who showed the importance of medals in ascertaining the dates, and arranging the order of events, in ancient history, by means of medals, was Vaillant, in his *History of the Kings of Syria*, printed at Paris in 1681. By medals alone, he has been enabled to fix the chronology and important events of history, in the three most ancient kingdoms of the world, viz. Egypt, Syria, and Parthia. Many coins have been discovered since his time, which confirm the accounts he has given. He was followed in this method by Father Hardouin, though with less success. Hardouin's best work is his *Herodiades*, or Series of Successors to Herod king of Judæa. The same plan was pursued by Noris, in his learned *Treatise on the Syro-Macedonian princes*, and by Bayer Vol. XI. Part I.

in his *History of Osrhoene*, as well as by Froelich, in the work intitled *Annales Regum et Rerum Syriae*, Vien. 1754; and another named Kevenhullers *Regum veterum Numismata Anecdota aut Perrara*, Vien. 1752, 4to, of which Froelich was properly the author. Corfini and Cary likewise published works of a similar nature; the former in 1744, *De Minnifari, aliorumque Armenia Regum, Nummis, &c.*; the latter in 1752, *Histoire des Rois de Thrace, et du Bosphore Cimmerien, éclaircie par les Medailles.*

Utility of
them in Hi-
story, &c.

The study of the Greek coins does not show the dates of events, though it illustrates the chronology of reigns. This defect, however, is abundantly supplied by those of Rome, which commonly mark the date of the prince's consulship, the year of his tribunician power; giving also, upon the reverse, the representation or poetical symbol of some grand event. The year of the tribunician power is sometimes imagined by antiquaries to be synonymous with that of the emperor's reign: but this is not the case; and Mr Pinkerton is at some pains to set them right in this respect. He finds fault with Julius Cæsar, when he assumed the sovereign authority, for taking upon him the title of Perpetual Dictator, as being synonymous with that of king or absolute governor, which the Romans abhorred. "He ought (says our author), under the disguise of some supreme magistrate of annual election, to have lulled the people with a dream, that they might terminate his power when they pleased; or that he himself would resign it, when the necessities of state which had required his temporary elevation had subsided." To this error Mr Pinkerton ascribes the assassination of the Dictator, and commends the policy of Augustus, who, with far inferior abilities, continued in possession of the most absolute authority as long as he lived. The tribuneship was an office of annual election; and if put into the hands of any others than plebeians, must have been the supreme power of the state, as it belonged to that office to put a negative upon every public measure whatever. Augustus, being of senatorial rank, could not assume this office; but he invested himself with the tribunician power, which had the advantages of appearing to be only a temporary supremacy, though in truth it was continued during his whole lifetime. Towards the end of his reign, he frequently assumed his destined successor, Tiberius, for his colleague, though in the beginning he had enjoyed it alone. This, with his artifice of resigning his power every ten years, and re-assuming

Of the
Greek
coins.

Method
used by
Augustus
to secure
his power.

A

re-assuming

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Utility of
them in Hi-
story, &c.

re-assuming it at the desire, as was pretended, of the senate, secured his sovereignty as long as he lived.—His example was followed by his successors; so that most of them have the inscription *Tribunicia Potestate* upon their medals, with the date affixed to it thus, *Tr. Pot. VII.* Yet though this date generally implies the year of the emperor's reign, it sometimes happens that the emperor, by special favour from a former prince, had been endowed with this title before he came to the throne, as being the successor to that prince, of which we have already given an instance in Tiberius. Besides the tribunician power, the emperors very frequently enjoyed that of the consuls; and the date of their consulship is frequently expressed in their coins.

The office of Pontifex Maximus was likewise assumed by the Roman emperors in order to secure themselves in their authority; which, Mr Pinkerton observes, was one of the most efficacious artifices they could have fallen upon. "In the Greek heroic times (says he), king and priest were carefully united in one person; and when sovereigns arose in Denmark and Sweden, the same plan was followed, as appears from Snorro, and other writers. Nothing could lend more security to the person of the monarch than an office of supreme sanctity, which also confirmed his power by all the terrors of superstition. Even the Christian system was afterwards debased by a mock alliance with government; though it be clear from the whole New Testament, that such an alliance is subversive of its genuine institution, and the greatest of all its corruptions. But the Roman Catholic clergy, in the dark ages, were the authors of 'no church no king,' for their own interest; while the Roman emperors only sought to strengthen their power by the dark awe of superstition. The title of Pontifex Maximus was so important, that it was retained even by the Christian emperors till the time of Gratian. Its influence in the state was, indeed, prodigious. Cicero observes, that to this office were subject temples, altars, penates, gods, houses, wealth, and fortune of the people.—That of augur is also borne by many emperors; and its authority was such, that by the law of the twelve tables no public business could be transacted without a declaration from the augur concerning its event.—The pro-consular power was also given to Augustus and the other emperors. It conferred a direct authority over all the provinces, and implied the emperor to be chief pro-consul, or governor of each, and of all. Another special power assigned to the emperors, but not occurring on coins, was the *Jus Relationis Tertiae, Quarta, &c.* or the right of making three or four motions in the senate on the same day, while the senators could only propose one.

Hence our author infers, that medals afford the most authentic documents of the Roman history, in particular, that could have been invented by man.—The histories of Nerva and Trajan are much better elucidated by medals than by authors; for the history of Suetonius ends with Domitian, and the *Historia Augusta Scriptores* begins with Adrian: so that the reigns of the two emperors just mentioned are almost unknown; and Mr Pinkerton is surprised that none of the learned have attempted to supply the defect.—

"Capitolinus (says he), in his life of Maximinus Junior, is quite puzzled to know if Maximus and Pupienus were two emperors, or two names for the same. Had he happened on any of those coins which bear M. CL. PUPIENUS MAXIMUS AUG. he would have seen at once that Maximus was only another name for Pupienus."

Medals are useful in other sciences besides history. In geography, we find the situation of towns determined by their vicinity to some noted river, mountain, &c. Thus, ΜΑΓΝΗΤΩΝ ΣΙΠΥΛΟΥ shows that Magnesia was situated under Mount Sipylus. In like manner, it is shown from a medal, that Ephesus stood on the river Cayster; and there is extant a medal, bearing an inscription, which signifies Alexandria on the Scamander; a name given to Troy by Alexander the Great. The reverse has upon it the famous Apollo Smintheus of Homer. In natural history, also, medals are useful chiefly from the coins struck on the celebration of the secular games, in which the figures of various animals are preserved; and thus it may very often be determined whether any animal be known to the ancients or not. On many of the Greek medals are several uncommon plants and animals. Thus, on most of the medals of Cyrene is the figure of the celebrated *Sylphium*; and on those of Tyre, the shell-fish from which the famous Tyrian purple was procured. By means of medals, also, the exact delineations of many noble edifices are preserved, though not even a vestige of their ruins be now existing; so that the uses of them to the architect are very considerable. To the connoisseur they are absolutely necessary; because by them alone he is enabled to ascribe ancient busts and statues to their proper persons, with multitudes of other points of knowledge which cannot be otherwise determined. The elucidations of obscure passages in ancient authors by means of medals are so numerous and well known, that it is needless to insist upon them.

Mr Addison has treated the connection betwixt medals and poetry at considerable length; but Mr Pinkerton finds fault with him for preferring the Latin to the Greek poets. He observes also, that the knowledge of Greek medals is most necessary for a sculptor, and perhaps an architect; but an acquaintance with Latin ones is preferable for a poet, or perhaps a painter. The reason of this difference is, that the former generally have on the obverse the head of some king, god, or goddess, of exquisite relief and workmanship; but the reverse seldom affords much fancy of symbol in the early Greek coins; and in the imperial Greek coins, is chiefly impressed with the temples of their deities. To a person of poetical imagination, however, the Roman coins afford the greatest entertainment, from the fine personifications and symbols to be found on their reverses; of which our author gives the following instances:

"HAPPINESS has sometimes the caduceus, or wand of Mercury, which Cicero, *l. Offic.* tells us was thought to procure every wish. She has in a gold coin of Severus heads of poppy, to express that our prime blessing lies in oblivion of misfortune.

"HOPE is represented as a sprightly girl, walking quickly, and looking straight forward. With her left hand

Utility of
them in Hi-
story, &c.

4
Use of me-
dals in geo-
graphy.

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In natural
history.

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In architect-
ture.

7
In the fine
arts.

8
Latin me-
dals of use
to a poet.

9
Personifica-
tion on Ro-
man medals.

Utility of
them in Hi-
story, &c.

hand she holds up her garments, that they may not impede the rapidity of her pace; while in her right hand she holds forth the bud of a flower; an emblem infinitely more fine than the trite one of an anchor, which is the symbol of Patience and not of Hope. This personification, with some others, must have been very familiar to the ancients; for often in this, and in a few more instances, no name, as *SPES AUG.* or the like, is inserted in the legend.

"ABUNDANCE is imagined as a sedate matron, with a cornucopia in her hands, of which she scatters the fruits, and does not hold up her cornucopia and keep the contents to herself, as many modern poets and painters make her do.

"The Emperor Titus, having cause to import a great supply of corn during a scarcity at Rome, that supply, or the *ANNOŒA*, is finely represented as a sedate lady, with filled cornucopia in her left hand, which she holds upright, to indicate that she does not, however, mean to scatter it, as Abundance has a title to do, but to give it to Equity to deal out. This last particular is shown by her holding a little image of Equity, known by her scales and *hæsta pura*, or point-lefs spear, in her right hand, over a basket filled with wheat. Behind the *ANNOŒA* is the prow of a ship decked with flowers, to imply that the corn was brought by sea (from Africa), and that the ships had had a prosperous voyage. The best poet in the world would not have given us a finer train of imagery; the best painter would have been puzzled to express so much matter in so small a compass.

"SECURITY stands leaning upon a pillar, indicative of her being free from all designs and pursuits; and the posture itself corresponds to her name. Horace, in describing the wise man, mentions his being *teres atque rotundus*; round and polished, against all the rules of chance: an idea seemingly derived from the column upon which this ideal lady reclines.

"The emblems of PIETY, MODESTY, and the like, are equally apposite and poetical.

"The happiness of the state is pictured by a ship sailing before a prosperous breeze: an image than which the superlative genius of Gray could find none more exquisite; and he has accordingly used it in his most capital production "The Bard," with due success.

"The different countries of the then known world are also delineated with great poetical imagery. It affords patriotic satisfaction in particular to a Briton, to see his native island often represented upon the earliest imperial coins sitting on a globe, with a symbol of military power, the *labarum* in her hand, and the ocean rolling under her feet. An emblem almost prophetic of the vast power which her dominion over the sea will always give her, provided she exerts her element of empire with due vigour and perseverance.

"Coins also present us with Achaia, Africa, Alamanica, Alexandria, Arabia, Armenia, Asia, Bithynia, Cappadocia, Dacia, Dardania, Egypt, Gallia, Hispania, Italia, Judæa, Macedon, Mauritania, Pannonia, Parthia, Phrygia, Sarmatia, Sicily, Scythia, Syria, and the rivers Danube, Nile, Rhine, Tyber. This personification of provinces seems to have arisen from the figures of provinces carried in triumphs; as the personification of our old poets sprung from the

ideal persons actually represented in the mystical plays.

"There is one colonial medal of rude execution of Augustus and Agrippa, which has an high claim to merit in displaying the ancient poetical imagery. It is inscribed *IMP. and DIVI. F.* and on the reverse, the conquest of Egypt is represented by the metaphor of a crocodile, an animal almost peculiar to that country, and at that period esteemed altogether so; which is chained to a palm-tree, at once a native of the country, and symbolic of victory.

"As the reverses are so useful for knowledge of personification, symbols of countries and actions, and the like; so the portraits to be seen on old coins are no less important to a painter; the high merit of a great number of them, in every character, justly intitling them to be regarded as the best studies in the world. Not to mention, that, to an historic painter, the science of ancient medals is absolutely necessary, that he may delineate his personages with the features they really bore while in existence. This can only be attained in this way, or from statues and busts; any one of which will cost as much as hundreds of medals; and indeed a collection of such is only attainable by princes."

The same things which render the study of medals important to a painter, do still more so to a sculptor; and in this particular, the study of the Greek coins is remarkably useful. The skill of the Greeks in the art of sculpture has always been admired throughout the world; and on their coins the heads of several deities are represented in the most exquisite *alto-relievo*. Our author therefore thinks it strange, that the Grecian coins should have hitherto been so little attended to by men of learning and taste. They may have been looked upon, he supposes, as belonging only to the province of the antiquary; but he assures us, that the Greek medals will afford satisfaction to the persons who value them only as pieces of workmanship. In most respects, they greatly excel those of Rome even in its best times; which our author supposes to have been from the days of Augustus to Adrian. "In the days of Adrian, in particular (says he), the Roman mint seems to have been the very seat of art and genius; witness the vast number of exquisite personifications, engraven with equal workmanship, which swarm on the medals of that prince. Yet from his time down to Posthumus, coins of admirable workmanship are to be found. Those of the Faustinas and Lucilla deserve particular mention. There is one, and not an uncommon one, of the latter in great brass, which yields to nothing of the kind. The reverse is a Venus with the name around her. The portrait of the obverse seems to spring from the field of the coin; it looks and breathes, nay talks, if you trust your eyes. The coins of Tarsus are extremely remarkable for a kind of perspective in the figures, as Froelich observes. On others are found triumphal arches, temples, fountains, aqueducts, amphitheatres, circi, hippodromes, palaces, basilicas, columns and obelisks, baths, sea-ports, pharoscs, and the like. These furnish much pleasure and instruction to the architect, and serve to form his taste to the ancient manner; that manner which unites perfect simplicity with sublimity and grace; that manner which every

Utility of
them in Hi-
story, &c.

10
Medals use-
ful to a
painter.

11
To a sculp-
tor.

Entertain-
ment from
studying
them.

age admires, in proportion as it has genius to imitate."

SECT. II. *Entertainment arising from the Study of Medals.*

BESIDES the purposes which the study of medals answers in the useful arts, a great variety of sources of entertainment are to be found in it. Mr Pinkerton observes, that the most barbarous nations are more pleased with the rudest efforts of art, than with the most admirable works of nature; and that in proportion as the powers of the mind are large and various, such are also the pleasures which it receives from those superlative productions of art, which can only be the offspring of vast genius. Hence works of art are agreeable both to the enlightened and to the ignorant. The chief amusement, therefore, which attends the study of medals, originates from the strength and spirit, the finish and beauty, which the engraver has displayed in the execution of them. It besides gives a kind of personal acquaintance with the persons of whom they are the representations. Portraits have always been highly entertaining to mankind; and our author is of opinion, that the love of them gave rise both to painting and sculpture. They are no where to be found so ancient, numerous, and so well preserved as in medals. Amusement is also derived even from the representations of ideal heads and persons; nay, even from the minutest symbols. Thus the Greek coins of cities present us with heads of deities of exquisite workmanship, apparently copied from statues or paintings; so that we may even guess at the works of Apelles and Praxiteles from some of the Greek medals. Their reverses afford still greater variety; there being scarce an object either in art or nature which is not represented upon some of them: and to the satisfaction arising from a view of these, we may likewise add that of beholding, in a lively manner, the dresses, manners and customs, religious and civil ceremonies, of the ancients: so that from medals we may obtain an interesting history of manners; which, though very lately cultivated, may perhaps afford the most useful and entertaining of all the provinces of history.

12
Difference
betwixt a
medallist
and anti-
quary.

There is a very considerable difference betwixt the study of medals and that of a mere antiquary. The latter frequently seems to take delight in coins merely in proportion to their rust and deformity; so that it is often a recommendation of some of their pieces, that neither portrait, reverse, nor legend, can be discovered; at least in such manner as can be intelligibly explained. "The delight of the antiquarist (says Mr Pinkerton) may be called a depraved appetite of the mind, which feeds on trash, and fills itself with emptiness. It is perhaps a mere childish curiosity mingled with caprice and hypochondricism. Against this character the ridicule of Severus is particularly shot, but with little effect; for our antiquists exceed in visions and nonsense. I say *antiquists*; for the name of antiquary is sacred. By *antiquary*, in foreign countries, is implied a man who illustrates their ancient laws, manners, poetry, but especially their ancient history. There, men of the most elevated minds are antiquaries; as Muratori, Leibnitz, Montesquieu, Du Bos. Here men of talents will not stoop, forsooth, to studies the

most important to their country, but leave its antiquities to chance. Every thing is important but our history; and we are profound in every ancient matter that is superficial; and superficial in what is profound. Even England cannot boast of one general historian, but trusts to the inaccuracy of Rapin, and the ignorant neatness of Hume. It is therefore no wonder that the study of antiquity is here ridiculous, though most important in other countries; none requiring greater talents, learning, or industry. But the historic antiquary has the pleasure of benefiting society, and enlightening whole nations, while the medallic has only an innocent amusement. This amusement, considered merely as rising from antiquarian objects, has not been explained, though felt by most people, and more by the learned. It seems analogical with that which we derive from an extensive prospect: for as the mind delights to expand itself into distant places, so also into distant times. We connect ourselves with these times, and feel as it were a double existence. The passions are singularly affected by minute circumstances, though mute to generalities; and the relicts of antiquity impress us more than its general history."

History.

SECT III. *History of Medals.*

THE study of medals is not of very ancient date: None of the classic writers give any account of collections of them; though indeed many little particulars are passed without notice by them. In the times of the Greeks, a collection of such coins as then existed must have been but little regarded, as consisting only of those struck by the numerous little states which at that time used the Greek characters and language. Hence they would have had an air of domestic coinage, and no attention would have been paid to them, however exquisite their workmanship might have been. The little intercourse at that time carried on betwixt the different provinces also, greatly impeded any communication of knowledge to those who wrote histories; so that it is no wonder to find any small collections that might then have existed altogether unnoticed by them.

Almost as soon as any communication was opened between the Greeks and Romans, the latter treated the arts of the Greeks with all due respect and applause. Their coins were imitated by the Romans, and preserved in cabinets by the senators among their choicest treasures. Suetonius informs us, that on solemn occasions Augustus was accustomed to present his friends with medals of foreign states and princes, along with other valuable testimonies of his friendship. In a more advanced period of the Roman empire, however, individuals would undoubtedly form collections of coins peculiar to their own state; for Dr Stukeley, in his *Medallic History of Carausius*, informs us, that a complete series of silver coins was lately found in Britain, containing all the emperors down to Carausius inclusively. From Banduri we also know, that certain Greek coins were specially preserved by the Romans; and it appears from their code, that ancient gold and silver coins were made use of instead of gems; to which distinction those of Sicily were particularly intitled. From the decline of the Roman empire till towards the end of the 5th century,

133
Greek coins
imitated by
the Ro-
mans.

History. ry, almost all branches of literature were involved in darkness, and the medallic science among the rest. While the Christian dominion of Constantinople lasted, indeed, almost all the arts and sciences may be said to have been kept within its own boundaries; though the Arabs and eastern nations had some arts and sciences of their own: but after the destruction of the imperial city by the Turks, the Greeks were once more compelled to become fathers to the European Science. Even before this time, indeed, some vestiges of a revival of literature had appeared in Italy; "and so intimate and necessary a connection (says Mr Pinkerton) has now the study of medals with that of ancient erudition, that on the earliest appearance of a revival of the latter, the former was also disclosed."

14
Collectors
of medals.

The first among the moderns who began to study the medallic science was Petrarch. Being desired by the Emperor Charles IV. to compose a book containing the lives of eminent men, and to place him in the list, he replied, that he would do so whenever the emperor's life and conduct deserved it. In consequence of this conversation he afterwards sent the emperor a collection of gold and silver coins bearing the representations of eminent men, with an address suitable to his former declaration. A collection of coins was made in the next age by Alphonso king of Arragon; but though this monarch collected all that could be found throughout Italy, we know that there could not have been very many, as the whole were contained in an ivory cabinet, and carried always about with him. A very considerable collection was made by Anthony Cardinal St Mark, nephew to Eugene IV. who ascended the pontifical chair in 1431; and soon after the grand museum at Florence was begun by Cosmo de Medici, where a collection of ancient coins and medals had a place among other curiosities. Corvinus king of Hungary about the same time formed a noble collection of coins along with ancient manuscripts and other valuable reliques of antiquity.

Mr Pinkerton considers Agnolo Poliziano, more commonly known by the name of *Angelus Politianus*, as the first writer who adduced medals as vouchers of ancient orthography and customs. He cites different coins of the Medicean collection in his *Miscellanea* written about the year 1490. By means of a cabinet of medals collected by Maximilian I. emperor of Germany, Joannes Huttichius was enabled to publish a book of the lives of the emperors, enriched with their portraits, delineated from ancient coins. It is generally supposed that this book, which appeared in 1525, was the first work of the kind; but Labbe, in his *Bibliotheca Nummaria*, mentions another named *Illustrum Imagines*, by one Andreas Fulvius, printed in 1517, in which most of the portraits seem to be from medals. About the year 1512 also, Guillaume Bude, a French author, had written his treatise *De Assé*, though it was not printed till many years afterwards. M. Grollier, treasurer of the French armies in Italy, during part of the 16th century, had a great collection of coins of different kinds of metals. After his death, his brass medals were sent to Provence, and were about to be sent into Italy; when the king of France, having got information of the transaction, gave orders to stop them, and purchase the whole at a very high price for his own cabinet of antiquities. M. Grollier had an as-

fortment of gold and silver as well as of brass medals: History. the cabinet in which they were contained fell two centuries afterwards into the hands of M. L'Abbe de Bothelin; and was known to have been that of Grollier from some slips of paper, on which was his usual inscription for his books, *Joannis Grollierii, et amicorum*.

Cotemporary with Grollier was Guillaume de Choul, Number of cabinets. 15 who was likewise a man of rank and fortune. He had a good collection of medals, and published many in his *Treatise on the Religion of the ancient Romans* in 1557. In the low countries we know, from the letters of Erasmus, that the study of medals was begun about the beginning of the 16th century. About the middle of that century, Hubertus Goltzius, a printer and engraver, travelled over most countries in Europe searching for coins and medals, in order to publish books concerning them. From one of these works it appears, that there were then in the low countries 200 cabinets of medals; 175 in Germany, upwards of 380 in Italy, and 200 in France. It is probable, however, that there are now four times as many in these countries, besides 500 in Britain; but we are not to imagine that all these were grand collections, for of such there are not above a dozen even in Italy: most of those just mentioned were of the class named *caskets* of medals, containing from 100 to 1000 or 2000.

There are few countries, Italy excepted, in which Number of coins found in Britain. 16 a greater number of coins have been found than in Britain; though we are by no means well acquainted with the time when the study of them commenced. Mr Pinkerton suspects that Camden was one of the first, if not the very first, British author who produced medals in his works, and who must have had a small collection. Speed's Chronicle, published in the 17th century, was illustrated with coins from Sir Robert Cotton's cabinet. Gortæus's collection was purchased by Henry prince of Wales, brother to Charles I. to whom he left it at his death. According to Joseph Scaliger, it consisted of 30,000 coins and medals. A collection of 5500 coins was purchased by Archbishop Laud for L.600, and given to the Bodleian library. Thomas earl of Arundel, earl-marshal of England, well-known from the Arundelian tables and other antiquities which he imported from Greece and Italy into Britain, had a rich cabinet of medals collected by Daniel Nisum. The dukes of Buckingham and Hamilton, Sir William Paston, Sir Thomas Fanshaw of Ware-Park, Sir Thomas Hanmer, Ralph Sheldon, Esq; Mr Selden, &c. are enumerated by Evelyn as collectors of medals. Charles I. as well as his historian the earl of Clarendon, were also collectors. The king had a very fine cabinet; which, however, were dissipated and lost during the civil commotions. Oliver Cromwell had a small collection; and the cabinet of Charles II. is mentioned by Vaillant in the preface to his treatise intitled *Nummi in Coloniais*, &c. This branch of magnificence has not been much attended to by succeeding British monarchs; though his present majesty has a very good collection of ancient gold coins.

A great number of fine cabinets have been formed British cabinets. 17 in Britain since the time of Evelyn. About the year 1720 Haym makes mention of those of the duke of Devonshire, the earls of Pembroke and Winchelsea, Sir

Of what
constructed

Sir Hans Sloane, Sir Andrew Fontaine, Mr Sadler, Mr Abdy, Mr Wren, Mr Chicheley, and Mr Kemp. At present there are many remarkable collections; but that of the late Dr Hunter is deservedly esteemed the most remarkable in Europe, excepting that of the French king. It was not only formed at a great expence, but with much care and ability; many foreign medals offered to it having been rejected. The other remarkable collections are those of the duke of Devonshire, the earl of Pembroke, earl Fitzwilliam, formerly the marquis of Rockingham's, the honourable Horace Walpole, the reverend Mr Crachrode, the reverend Mr Southgate, Mr Townley, Mr R. P. Knight, Mr Edward Knight, Mr Tyson, Mr Barker, Mr Brown, and several others. The museum and universities have also collections; as well as the lawyers library, and the colleges in Scotland.

SECT. IV. *Materials of which Medals are constructed.*

18
Ancient
gold coin.

MEDALS are formed of gold, silver, and the various modifications of copper. The gold usually made use of in coinage is about the fineness of 22 carats; and as the art of purifying this metal was very much unknown in former times, the most ancient medals are for this reason much more impure than the modern coins. Gold is never found in its native state above 22 carats fine; and the very ancient medals are much under that standard. Many of them are composed of a mixture of gold and silver, called by the ancients *electrum*. The gold medals were made of much finer metal after Philip of Macedon became possessed of the gold mines of Philippi in Thrace, and the medals of his son Alexander the Great are equally fine; as well as those of some other princes of that age. Those of the Egyptian Ptolemies are of the fineness of 23 carats three grains, with only one grain of alloy. The Roman coins are very pure even from the earliest times; the art of refining gold being well known before any was coined at Rome. Some authors are of opinion, that the Roman coins begin to fall short of their purity after the time of Titus; but Mr Pinkerton denies that any thing of this kind takes place till the time of the Emperor Severus; and even then only in a very few instances. Most of the Roman gold was brought from Dalmatia and Dacia, where that metal is still to be met with. A very remarkable circumstance is observed in the eastern part of Hungary, which belonged to the ancient Dacia: It germinates in the vines of Tokay, and is found in their stems; as it is elsewhere in the straw of corn.

19
Metal call-
electrum.

Pliny informs us, and indeed it is generally known, that gold and silver are found mixed together in the earth. When the silver amounted to one-fifth part of the gold, the metal was called *electrum*; but sometimes the quantity of silver was added artificially. The gold was in those days as well as at present refined by means of mercury: and the ancient artists had certainly attained to great perfection in this branch of metallurgy; as Bodin tells us, that the goldsmiths of Paris upon melting one of Vespasian's gold coins found only $\frac{1}{7}$ part of alloy.

20
Ancient sil-
ver.

Most of the ancient silver, particularly that of Greece, is less pure than that of succeeding times; even the

Roman silver is rather inferior to the present standard, and that from the very beginning; but in the time of Severus, the silver appears very bad, and continues so until the time of Dioclesian. Many writers upon this subject have mistaken the *denarii aerei*, "coins of brass washed with silver," for silver currency. Silver coins are extremely scarce from the time of Claudius Gothicus to that of Dioclesian, or from the year 270 to 284; in which short space no fewer than eight emperors reigned. Silver at that time was found mostly in Spain; and the commerce with that country was disturbed by the usurpers who arose in Gaul: and such were the troubles of the times, that not only the silver, but also the gold coins of those eight emperors, are extremely scarce. There is still, however, some silver extant of these eight emperors; and it is certain, that copper washed was never used as silver currency, but was entirely a distinct coinage. Occasional depravations of silver had taken place long before; as Pliny tells us, that Mark Anthony mixed iron with his silver denarii; and Mr Pinkerton informs us, that he had seen a denarius of Anthony, which was attracted by a magnet.

The ancient brass coins consist of two kinds: the red or Cyprian, which indeed is no other than copper; and the common yellow brass. Our author observes, that in the Roman coinage brass was of double the value of copper, and he is of opinion, that it was the same among the Greeks; and the latter is the metal most commonly made use of in the Greek coinage. The Roman sesterii are always of brass: the middling-sized kind are partly copper and partly brass; the former being double the value of the latter, which are the *ases*.

Mr Pinkerton next proceeds to give an account of the mixed metals used among the Romans. In Britain all kinds of coins made of mixed metal are without hesitation alleged to be forgeries; although it is certain that the variety of mixed metals used in coinage was very considerable. The most valuable mixture was that of gold or silver already mentioned, named *electrum*; the silver commonly amounting to one-fifth part of the gold made use of, or perhaps more. Of this mixture are many of the early coins of Lydia, and some other Asiatic states; also those of the kings of the Bosphorus Cimmerius, during the imperial ages of Rome. Next to the *electrum* were the coins of Corinthian brass; but Mr Pinkerton informs us, that not a single coin was ever struck of this metal by the ancients; it having been constantly employed only in the fabrication of vases or toys. It was in use at any rate only for a very short time; being altogether unknown in the days of Pliny the Elder. Our author therefore ridicules those who pretend not only to find out imperial coins of this metal, but to discover three kinds of it; viz. one in which the gold predominates, another in which the silver prevails, and a third where the brass is most conspicuous. He gives Æneas Vico, one of the most ancient writers on medals, as the author of this idea; but whose opinions were confuted by one Savot, a writer in the 17th century. Vico mentions a coin of this kind struck under Augustus, another of Livia, and a third of Claudius. The mistake, he is of opinion, arose from the circumstance of the first propagator not being able to account for the

various

Of what
constructed

21
Ancient
brass.

22
Mixed me-
tals.

23
Corinthian
brass.

Of what
constructed

various mixtures and modifications of brass observable in ancient coins of the large size; and which in so common a metal appear very odd to the moderns. Besides the authority of Pliny and other antiquaries of more modern date, who all declare that they never saw a single medal of Corinthian brass, or of that metal mixed with silver and gold, our author adduces another evidence which he looks upon to be superior to either; viz. that those who have given into this supposition, imagine, that the large pieces called *sestertii*, and others called *dupondarii*, worth about twopence or a penny, are said to have been composed of this precious metal. It is unreasonable to think, that any proportion of gold or silver could have been made use of in these. The coins said to have been struck upon Corinthian brass are only done upon a modification of common brass; of which we know, that in proportion to the quantity of zinc made use of in conjunction with the copper, the metal assumes a variety of hues. On the authority of Pliny he informs us, that the coins mistaken for Corinthian brass were no other than prince's metal.

24
Egyptian
silver coins.

The Egyptian silver coins struck under the Roman emperors are at first of tolerably pure silver; but afterwards degenerate into a mixture of copper and tin with a little silver. They are very thick, but many of them are elegantly struck, with uncommon reverses. There are likewise three sets of brass coins belonging to this country from the earliest times of the Roman emperors there. Some of these are of bell-metal or pot-metal; and after the time of Gallienus and Valerian, the coinage of brass with a small addition of silver becomes authorised by the state; the coins struck upon it being called *denarii aerei*. Those of lead or copper plated with silver have been fabricated by Roman forgers. Some coins of lead, however, have been met with of undoubted antiquity: and an ancient writer informs us, that tin-money was coined by Dionysius; but none has been found. The lead coins of Tigranes king of Armenia, mentioned as genuine by Jobert, are accounted forgeries by Mr Pinkerton and other modern medallists. Plautus, however, makes mention of leaden coins, and several of them have been found; but our author looks upon them to have been chiefly essay pieces, struck in order to let the artist judge of the progress of the dye. Others are the plated kind already mentioned, fabricated by ancient forgers, but having the plating worn off. A great number of leaden coins are mentioned by Ficorini in a work intitled *Piombi Antichi*, in which he supposes them to have served as tickets for guests; and coins of the same kind are also mentioned by Passeri. In the work intitled *Notitia Imperii Romani*, there is mention of coins made of leather, but none of them have ever been found.

SECT. V. Of Ancient Money.

IN considering the different sizes, values, &c. of the Greek and Roman coins, our author treats of the medals as money; a knowledge of which, he says, is essentially necessary to every reader of the classics; inasmuch that it may almost dispute the preference with the studies of ancient geography and chronology. Notwithstanding all that has been written upon the sub-

ject, however, our author is of opinion, that the science is still in its infancy, in as far as it relates to the real money of the ancients. "The ideal (says he), which is indeed the most important province of discussion, has been pretty clearly ascertained; and we are almost as well acquainted with the Attic *mina* or *mina*, and the perplexing progress of the Roman *sestertia*, as with our own *pounds*. But with the actual coin of the ancients the case is different; and the ignorance even of the learned in this point is wonderful."

Our author now goes on, with great asperity of language, to particularise the ignorant manner in which modern authors have treated the subject of medals. "Arbuthnot and Clarke (says he) are if possible more ignorant of medals than Budæus the very first. The latter professes his love of medals, but quotes a consular coin with the head of Cicero; and looks upon one of the 30 pieces of silver, the reward of the treachery of Judas, and which was said to be preserved among some reliques at Paris, to be worthy of reference and commemoration. Arbuthnot, if we may judge from his book, had never seen any ancient coins; and Clarke, it is well known, was quite ignorant of them. The latter, with all his labour, seems even to have known nothing of the theoretic part of the real ancient money. Indeed Dr Mead's catalogue seems to have been almost the only book on medals which had undergone his perusal. On the other hand, the ignorance of medallists on this score is no less profound. To this day they look upon the *didrachms* of Ægina, so celebrated in antiquity, as *tridrachms* of Ægium; and upon the early obolus as a brass coin. In the Roman class the large brass is esteemed the *as*, while it shall be proved that it is the *sestertius*, and worth four *ases*. The *denarius* is reckoned at ten *ases* even in the imperial times; whereas it only went at that rate for the first 90 years after the coinage of silver at Rome. The *denarius æreus* is taken for silver currency; with other mistakes which evince that medallists are as ignorant of the theory as the others are of the practice."

In his account of the ancient Greek money, Mr Pinkerton observes, that the light of science, like that of the sun, has proceeded from east to west. "It is most probable (says he), that the first invention of money arose like the other arts and sciences; and spread from thence into the western parts of the world. In its first shape it appeared as mere pieces of metal without any stated form or impression; in lieu of which, it was regulated by weight. Even down to the Saxon government in England, large sums were regulated by weight; and in our own times every single piece is weighed in gold; though with regard to silver this nicety is not minded, nor indeed does it seem practicable. Among the ancients, whose commercial transactions were less important and extensive than those of the moderns, silver was weighed as well as gold; nay even brass, in some cases."

In Greece, large sums were determined by *mina* or *mina*; and the most capital sums by *talents*. In every country the *mina* is supposed to have contained 100 drachmæ, or small silver coins, of that country, and the talent 60 *mina*. The *mina* is supposed to be a pound weight of the country to which it belonged. The Attic pound, according to Dr Arbuthnot, contained

Ancient
Money
25
Knowledge
of ancient
money im-
perfect.

26
Money first
coined in
the east.

27
Its first
rude state.

28
Greek money.

Ancient
Money.

tained 16 ounces, equal to our avoirdupois pound: but Mr Pinkerton looks upon this as a very absurd opinion, and accuses the Doctor of having adopted it merely that he may explain a passage in Livy. He is of opinion, that the Attic pound is very nearly the same with the pound Troy. The mina of Athens had at first 73 drachms; but by Solon it was fixed at 100. The ancient drachm weighed the same which it does at present in medical weight, viz. the eighth part of an ounce. The mina or pound of 12 ounces had consequently 96 of these drachms; but four of them were given to the round sum to supply defects in the alloy; "and indeed (says our author), in consequence of a common practice in all ages and in all countries, of giving some addition to a large weight. Thus the pound in weight had but 96 drachmæ in fact, while the pound in tale had 100; as the Roman libra in weight had but 84 denarii; in tale 100; and as our pound in tale, by an inverse progress, is not a third of our pound in common weight."

29
Of the an-
cient ta-
lents.

Notwithstanding the very severe criticism on Dr Arbuthnot just mentioned, however, we find our author adopting his account of the *talents* used in coinage in several countries. Thus, according to the Doctor,

The Syrian talent had	15 Attic minæ.
Ptolemaic	20
Antiochian	60
Eubæan	60
Babylonian	70
Larger Attic	80
Tyrian	80
Egyptian	80
Egean	100
Rhodian	100

Notwithstanding the concession made here by Mr Pinkerton to the Doctor, he tells us, that he very much questions this list of talents, and that many ancient writers are little to be relied upon. "Writers on this subject confess, that the numbers in all ancient manuscripts are the parts most subject to error, as being almost always contracted. They ought to allow that the authors themselves must often be liable to wrong information.

"Herodotus mentions, that King Darius ordered gold to be paid into his treasury by the Euboic talent, and silver by the Babylonian. The Euboic is esteemed the same with that called afterwards the Attic; and as we estimate gold by carats, so it is natural to suppose, that the most precious metal would be regulated by the most minute weight. But I confess, I take the Babylonian talent to be the same with that of Ægina. Mr Raper has proved the first coins of Macedon to be upon the standard of Ægina. Now the early Persian coins are upon that very scale, the largest tetradrachms weighing from 430 to 440 grains. Hence it follows, that the Persian silver coins were of the Æginian standard; and the payment was certainly to be made according to the standard of the money. The larger Attic talent was of 80 lesser minæ; because the larger Attic mina was of 16 ounces. The Alexandrian talent, according to Festus, consisted of 12,000 denarii, being the same with that used by the Egyptian kings in their coins; and is shown by Mr Raper to have been the same with the talent of Ægina. Per-

Nº 201.

Ancient
Money.

haps the whole of the ancient coins of Asia, Africa, Greece, Magna Grecia, and Sicily, are reducible to three talents or standards. 1. That of Ægina, used in most of the more ancient silver coinages; as would seem in even the later of Egypt, Carthage, Cyrene, &c. 2. The Attic (being the Asiatic gold standard, afterwards used by Phidon king of Argos in estimating gold, and called Euboic from Eubœa, one of the quarters of the city of Argos), used in Athens and the greater part of the world as the standard both of gold and silver. 3. The Doric or Sicilian talent of 24 nummi, each worth an obolus and an half; whence the talent is estimated at six Attic drachms or three darics. These weights continued to be the standard of money after it began to be distinguished by impression; nay, to the fall of Greece and prevalence of the Roman empire."

Coinage, according to Herodotus, was first invented by the Lydians, from whom the Greeks quickly received it. The former could not have received it from the Persians, whose empire did not begin till 570 B.C. though our author supposes that it might have proceeded from the Syrians, who carried on commerce in very ancient times. The most ancient Greek coins of silver have an indented mark upon one side, and a tortoise upon the other; and those of greatest antiquity have no letters upon them. Those of later date have ΑΙΓΙ marked upon them, which medallists interpret of Ægium in Achaia; being led into that supposition by the tortoise, which they look upon as the sure mark of the Peloponnesus. But though our author agrees that the tortoise was so, he thinks that they are otherwise very far wrong in their conclusions. Ægium in Achaia was a place of no consequence till the times of Aratus and the Achaian league; but there are 11 of these coins in Dr Hunter's cabinet, which show that they must have been struck in times of the most remote antiquity, and that the place where they were struck was rich and flourishing at the time. The coins we speak of are not uncommon; but those which have the name ΑΙΓΕΙΩΝ at full length, and which may perhaps belong to Ægium in Achaia, are extremely scarce; insomuch that in all Dr Hunter's vast collection there are not above one or two. They are likewise constructed upon a scale quite different from all other Grecian money; being of 8, 13, 15½, 90, and about 186 grains. The Grecian drachma at an average is 66 grains; and Mr Pinkerton thinks it would have been strange if pieces had been struck of eight-tenths of an obolus, of an obolus and an half, or of a drachma and an half. Ægium being originally an obscure village, could not be the first which coined money; so that Mr Pinkerton supposes the name ΑΙΓΙ to have stood for Ægialus, the ancient name of Sicyon, a wealthy and powerful city; or rather Ægina, the mint of which was much celebrated, and perhaps the most ancient in Greece.

Other arguments in favour of these coins being derived from Ægina, are drawn from their weight as well as their workmanship, which are quite different from those bearing the name of Ægium at full length. The coinage of Ægina is known to have been different from that of the rest of Greece; insomuch that its drachma was worth 10 Attic oboli, while the Attic drachma was valued only at six. Hence the drach-

30
Coinage
originates
in Lydia.31
Most an-
cient Greek
coins de-
scribed.

Ancient Money.

mas of Ægina were named by the Greeks *παξίαν*, or *thick*; a name very applicable to the coins in question. From these observations, our author is of opinion, that we may even distinguish the precise weight of the ancient coins of Ægina. According to the exact proportion, the drachma of this place should weigh exactly 110 grains; and one of them very much rubbed weighed above 90. The others of larger size, which seem to be didrachms of Ægina, weigh from 181 to 194 grains; but the latter being the only one he could meet with in good preservation, it was impossible to form any just medium. Even in those best preserved, he thinks that ten grains may be allowed for a waste of the metal in so long a time as 2400 years, which would bring the drachma of Ægina near its proper standard. The obolus of Ægina was in proportion to its drachma of six oboli. It is the piece of $15\frac{1}{2}$ grains, and 13 when very much rubbed. The hemi-obolon is that of eight, and when rubbed ought to weigh nine.

³²
The drachma the most general denomination.

The general denomination of the Greek money is the drachma, or eighth part of an ounce; which to this day is retained in the medical weights, the Grecian coins receiving their names from the weights they bore; though in some instances the weights received their appellations from the coins. The silver drachma, according to Mr Pinkerton, was about nine pence sterling; and he finds fault with those who make the drachma and denarius both equal to one another, the latter being no more than eight pence. The didrachm of silver, according to the same calculation, was worth 18d.; but the *tridrachm* occurs very rarely: and Mr Pinkerton is even of opinion, that medallists give this name to the didrachm of Ægina. The largest of all the Grecian coins is the tetradrachm, which on the Ægean standard is worth five shillings; but in those of the other states only four. There are, however, many subdivisions in the silver drachma; the highest being the tetraobolon or coin of four oboli; being in proportion to the drachma as our groat to a sixpence, weighing about 44 grains, and being in value about sixpence. The hemidrachm or triobolon comes next in value, weighing about 33 grains, and worth fourpence halfpenny. The silver diobolon, or third of the drachma, weighs about 22 grains, and is worth three pence. The obolus of silver weighs about 11 grains, and is worth only three halfpence. There is likewise a hemiobolon in silver, or half the obolus, of five grains and an half, value three farthings: and another called *tetartobolon dichalcos* or quarter obolus, which is the most minute coin yet met with; and by reason of its extreme smallness, weighing only two grains and a quarter, is now very scarce: but there is one in the cabinet of Dr Hunter, and some more have been lately brought from Athens by Mr Stuart. Some of them are likewise met with at Tarentum. It would appear, however, that there were some still smaller, and of value only three-fourths of a farthing. None of these have been met with; and the smallness of the size renders it improbable that any will ever be met with; as the peasants, who commonly discover coins, would probably either not observe them at all, or if they did would neglect them as things of no value.

VOL. XI. Part I.

Many different names have been imposed on the coins belonging to the different states of Greece: thus *Κορη*, the *maiden*, was a name often applied to the tetradrachm, and which would seem to apply to those of Athens; though there are coins of other cities with the head of Proserpine, and the word *Κορη*, to which it would appear more applicable in our author's opinion. *Χελωνι*, the *shell*, was the name of another coin from its type. A Sicilian coin was named *Δεμαρετιον*, from Gelon's wife. A tetradrachm was named *Κραπαταγους*, and had eight *εὐβας* or hemidrachms. The *τροισηνιον*, so called from its country Troizene, had Pallas on one side and a trident on the reverse. The hemiobolon was the *πριανον* of Lacedemon; and the *κολλυβη* is supposed to have been equal to the Roman sestertius or quarter drachma. The *cystophori* were coins with the mystic chest or hamper of Bacchus upon them, out of which a serpent rises; and are much celebrated in antiquity. We are told by Livy, that Marcus Acilius, in his triumph over Antiochus and the Etolians, carried 248,000 of them; Cneius Manlius Vulso in that over Gallo-Græcia had 250,000; and Lucius Emilius Regillus, in his naval triumph over the fleets of Antiochus, had 131,300. Cicero likewise mentions his being possessed of a vast sum in them. The most probable opinion concerning them seems to be, that they are all silver tetradrachms; such as belong to the cities of Apamea and Laodicea in Phrygia; Pergamus in Mysia; Sardes and Tralles in Lydia; and Ephesus; but it is a mistake to ascribe any to Crete. Mr Pinkerton thinks it absurd to imagine that Crete, a small island, should strike such vast numbers of coins; though Cicero mentions his being in possession of an immense treasure in them at the time he was governor of Asia Minor. "It is most likely (says Mr Pinkerton), that his wealth should be in the coin of the country to which he belonged. But what had these triumphs or Cicero's government to do with Cretan money? But indeed the coins themselves, as above noticed, establish the fact."

Another set of coins famous in antiquity were those of Cyzicus in Mysia, which were of gold; but they are now almost entirely vanished by being recoinced in other forms. The *Αργανδικον νομισμα*, or *money of Argandes*, who was made governor of Egypt by Cambyfes, is made mention of by Hesychius; but none of them, as far as is known, have reached our times. They must have been marked with Persian characters, if with any. The coin of Queen *Philistis* is mentioned by the same writer, and many of these pieces are still extant; but we know not where this queen reigned, nor does there seem to be any method of finding it out. Mr Pinkerton inclines to believe, that she presided over Sicily; and as a confirmation of that supposition, mentions some inscriptions of *ΒΑΣΙΛΙΣΣΑΣ ΦΙΛΙΣΤΙΔΟΣ* on the *Gradini* of the theatre at Syracuse; but which appear not older than the Roman times. Some authors are of opinion, that she reigned in Cosfara or Malta; which our author thinks much more improbable.

The most particular attention with regard to the names and standard of coins is due to those of Athens; and it is remarkable, that most of them which have reached us are of a very late period, with the names of

Ancient Money.

³³
Different names of Greek coins.

³⁴
Coins of Cyzicus.

³⁵
Athenian coins.

B

magistrates

Ancient
Money.

magistrates inscribed upon them. Some of these bear the name of Mithridates; and few are older than the era of that prince; who, it is well known, took the city of Athens in his war with the Romans. I suspect (says Mr Pinkerton) that no Athenian coins of silver are posterior to Sylla's infamous destruction of that city: an event the more remarkable, as Sallust tells us, that Sylla was learned in Greek. Indeed Caligula, Nero, and most of the pests of society, have been learned men, in spite of a noted axiom of Ovid,

*Sed ingenuas didicisse feliciter artes
Emollet mores, nec finit esse ferus.*

It is still more remarkable, that the fabric of Athenian coins is almost universally very rude: a singular circumstance, if we reflect how much the arts flourished there. It can only be accounted for from the excellence of their artists being such as to occasion all the good ones to be called into other countries, and none but the bad left at home. In like manner, the coins struck at Rome in the imperial times are excellent, as being done by the best Greek artists; while those of Greece, though famous at that time for producing miraculous artists, are during that period commonly of very mean execution. The opulence of Athens in her days of glory was very great; owing in an eminent degree to her rich commerce with the kingdoms on the Euxine sea; carried on chiefly from Delos, which belonged to Athens, and was the grand centre of that trade." Hence it has become matter of surprise to Neumann, that when there are so many coins of Mycene, an island even proverbially poor, there should be none of Delos. But Mr Pinkerton accounts for this from Mycene's being a free state, and Delos subject to Athens. "It may be well supposed (says he), that Athens had a mint at Delos; and such Athenian coins as have symbols of Apollo, Diana, or Latona, were struck in this island."

36
Greek copper
money.

The copper-money of the Greeks is next in antiquity to the silver. Mr Pinkerton is of opinion, that it was not used at Athens till the 26th year of the Peloponnesian war; about 404 years before Christ, and 300 after silver was first coined there. The first copper coins were those of Gelo of Syracuse, about 490 B. C.

37
Of the chal-
cos.

The chalcos of brass, of which eight went to the silver obolus, seems to have been the first kind of Greek coin. At first it was looked upon as of so little consequence, that it became proverbial; and to say that a thing was not worth a *chalcos*, was equivalent to saying that it was worth nothing. As the Greeks became poor, however, even this diminutive coin was subdivided into two, four, nay eight *λεπτα* or small coins; but our author censures very severely those who have given an account of those divisions. "Pollux and Suidas, copying from him (says he), tell us, that there were seven *lepta* to one *chalcos*; a number the most unlikely that can be, from its indivisibility and incapacity of proportion."

"Pollux lived in the time of Commodus, so was too late to be of the smallest authority: Suidas is four or five centuries later, and out of the question. Pliny tells us, that there were ten *chalci* to the obolus; Diodorus and Cleopatra that there were six; Isidorus says there were four: and if such writers differ about the

larger denomination, we may well imagine that the smaller equally varied in different states; an idea supported by these undeniable witnesses the coins which remain. Most of the Greek copper-coin which has reached our times consists of *chalci*; the *lepta* being so small as to be much more liable to be lost." In Dr Hunter's cabinet, however, there are several of the *dilepta* of Athens: and from being stamped with the representation of two owls, seem to be the same with the silver *diobolus*: "a circumstance (says Mr Pinkerton) of itself sufficient to confute Pollux; for a *dilepton* can form no part of seven; a number indeed which never appeared in any coinage of the same metals, and is contradictory to common sense. It may be observed, that the whole brass coins of Athens published by Dr Combe are reducible to four sizes, which may be the *lepton*, *dilepton*, *tetralepton* or *hemichalcos*, and *chalcos*. The first is not above the size of one of king James I.'s farthing tokens; the last about that of our common farthing." The *lepta* was also called *λεπτα*, as being change for the poor. The *Κισσος*, perhaps so called from the figure of a wolf upon it, was the coin of a particular state, and if of brass must have weighed three *chalci*. The other names of the copper-coins of Greece are but little known. Lysurgus ordered iron money to be coined at Sparta; but so perishable is this metal, that none of that kind of money has reached our times.

After the conquest of Greece by the Romans, most of the coins of that country diminished very much in their value, the gold coinage being totally discontinued: though some of the barbarous kings who used the Greek character were permitted to coin gold, but they used the Roman model; and the standard used by the few cities in Asia who spoke the Greek language in the times of the emperors is entirely unknown. Copper seems to have been the only metal coined at that time by the Greeks themselves; and that upon the Roman standard, then universal through the empire, that there might be no impediment to the circulation of currency. They retained, however, some of their own terms, using them along with those of the Romans. The *assarion* or *assarium* of Rome, the name of the diminished *as*, being 16 to the drachma or denarius, the obolus was so much diminished in value as to be struck in brass not much larger than the old *chalcos*, and valued at between two and three *assaria*; which was indeed its ancient rate as to the drachma. This appears from the copper coins of Chios, which have their names marked upon them. The brass obolus, at first equal in size to the Roman *sestertius* or large brass, lessens by degrees to about the size of a silver drachma. From the badness of the imperial coinage in Greece also, it appears that brass was very scarce in that country, as well as in all the cities using the Greek characters; being found mostly in the western countries of the Roman empire. The time of this declension in size of the Greek coins is by Mr Pinkerton supposed to have been from Augustus down to Gallienus. He is of opinion, however, that the copper obolus, at first above the size of large brass, was used in Greece about the time of its first subjection to Rome; and that the *lepta* ceasing, the *chalci* came in their room, with the *dichalcos* and the *hemiobolion* of brass.

Ancient
Money.38
Lepton,
dilepton,
&c.39
Era of the
declension
of the
Greek coin-
age.

With

Ancient Money.

40
Gold coins of Greece.

With respect to the gold coins of the Greeks, Mr Pinkerton is of opinion that none of that metal was coined before the time of Philip of Macedon, as none have reached our times prior to the reign of that monarch. From a passage in Thucydides our author concludes, that in the beginning of the Peloponnesian war the Athenians had no gold coin. Mentioning the treasure in the Acropolis or citadel of Athens, at the commencement of that war, the historian mentions silver coin, and gold and silver in bullion; and had any of the gold been in coin, he would certainly have mentioned it. Philip began his reign about 68 years after the beginning of the Peloponnesian war; and we can scarce suppose that any city would have preceded the elegant and wealthy Athens in the coining of gold.

41
Gold coined early in Sicily.

Notwithstanding, however, this deficiency of gold coin among the Greeks, it is certain that the coinage of gold had taken place in Sicily long before; as we have gold coins of Gelo about 491 B. C. of Hiero I. 478, and of Dionysius I. in 404, all using the Greek characters; though not to be ranked among the gold coins of Greece, as Philip caused his to be. Gold coins of Syracuse even appear of the third class of antiquity, or with an indented square, and a small figure in one of its segments. Gold coins were used in the cities of Brettium, Tarentum, and throughout Magna Grecia; also in Panticapæa in Thrace, and likewise Cosa in that country; but not in Tuscany, as is commonly believed, though Neumann proves that they are struck by Brutus, and are unquestionably as ancient as the Greek coins. The Thebans and Athenians probably coined the first gold after Philip had set them the example, and when they were attempting to resist the projects of that enterprising monarch. The Ætolians probably coined their gold during the time of their greatest power, about a century after Philip, and when they were combating the power of Aratus and the Achæan league. "There is (says Mr Pinkerton) but one χρυσός of Thebes, much worn, in Dr Hunter's cabinet, and weighing but 59 grains; and perhaps not above two or three χρυσοί or gold didrachms of Athens in the world; one of which is also in the collection of Dr Hunter, and weighs 132½ grains. It appears to be more modern than the reign of Philip. That monarch having got possession of the mines of Philippi in Thrace, improved them so much, that they produced him annually above a thousand talents of gold, or 2,880,000 l. of our money. From this gold the first coins named from the monarch *Philippi* were struck. They were marked with his portrait; and for many ages after were so numerous, that they were common in the Roman empire; whence the name *Philippi* became at length common to gold, silver, and at last even brass coins of their size. Even in the time of Philip gold was very scarce in Greece; but after the Phocians had plundered the temple of Delphos, this precious metal, which had been valued as gems, and consecrated only to the decoration of the temples of the gods, began to be known among the Greeks. The comparative value of gold and silver, however, seem to have been at that time very different from what they are now. Herodotus values gold at 13 times its weight in silver; Plato in his Hipparchus at 12; and even the low value of 10 to

1 seems to have been the stated value in Greece, tho' in Rome the plenty of silver from the Spanish mines made the value of gold to be much higher; and there is no reason to think that it was ever valued in that city at less than 12 times its weight in silver. The *Philippus*, χρυσός, gold piece, or *stater*, is a didrachm, and is the most common of all the ancient coins. Mr Pinkerton is of opinion that it went for 20 silver drachms on its first appearance; but in latter times for 25 Greek drachmæ or Roman denarii. There are proofs of the Philippi being didrachms, both from the writings of ancient authors and from numbers of the coins themselves, which remain to this day; and that the χρυσός, or principal gold coin of Greece, was of the same weight, is also evident from ancient writings. It was anciently worth about 15s. but valuing gold now at the medium price of 4 l. per ounce, it is worth about 20s. The ημίχρυσός, or half the former coin, scarcely occurs of the coinage of Philip and Alexander, though it does of Hiero I. of Syracuse and of king Pyrrhus. It passed for ten silver drachmas, and was valued only at 7s. 6d. though now worth 10s. There was another division of this kind worth about 5s. There were besides some lesser divisions of gold coins, which could not be worth above two drachmas. These were coined in Cyrene; and there were besides several old gold coins of Asia Minor, the value of which is now unknown. Our author supposes that they were coined not with relation to their weight as parts of the drachma, but merely to make them correspond with so many silver pieces as was necessary. There are also larger coins than the χρυσός, the διχρυσός of Alexander and Lyfimachus being double its value. Some others are met with by Lyfimachus, Antiochus III. and some of the Egyptian monarchs, weighing four times the χρυσός, and now worth about 4 l. sterling. Some weigh even more; but this our author supposes owing to the gold being less pure.

In Rome, as well as in Greece, the money was at first estimated by weight; and the first metal coined by that people was copper, silver being long unknown in Rome; nor is it certainly known that any silver has ever been found in the Italian mines. In Rome the first valuation of money was by the *libra gravis aris*, or pound of heavy brass: and in the progress of their conquests, the little silver and gold that came in their way was regulated by the same standard, as appears from the story of Brennus. The weights made use of were the same with those which continue to this day. The pound consisted of 12 ounces of 458 grains each; but the pound by which the money was weighed appears to have consisted only of 420 grains to the ounce, or to have contained in all 5040 grains. This became the standard of copper; and when silver came to be coined, seven denarii went to the ounce as eight drachms did in Greece. Gold was regulated by the *scriptulum* or *scrupulum*, the third part of a denarius, and by the larger weights just mentioned. The number 10 was at first used by the Romans in counting their money; but finding afterwards that a smaller number was more convenient, they divided it into quarters; and as the quarter of 10 is 2½, they for this reason bestowed upon it the name of *sestertius* or "half the third;" to express that it was two of any weights, as, &c. measures, &c. and half a third; whence the *sestertius*

Ancient Money.

42
Roman money.

43
Of the Roman pound.

44
Sestertius, as, &c.

Ancient
Money.

came at last to be the grand estimate of Roman money. The *as* being at first the largest, and indeed the only Roman coin, the word *sestertius* means *sestertius as*, or "two ases and an half." On the first coining of silver, the denarius of ten ases was struck in the most common and convenient denary division of money, or that by tens; the *sestertius* being of course two ases and an half. But the denarius being afterwards estimated at 16 ases, the name *sestertius* was still applied to a quarter of the denarius, though it now contained four ases. The term *sestertius* was applied to all sums not exceeding 1000 *sestertii*, or L. 8 : 6 : 8; but for greater sums the mode of the *sestertius* was likewise altered, though not to exclude the former. Very large sums of money were estimated by the hundred weight of brass; for the Romans were at first unacquainted with the talent. The hundred weight, by way of eminence, was distinguished by the name of *pondus*, and *sestertium pondus* became a phrase for two hundred weight and an half. Mr Pinkerton is of opinion, that we may value the *as libralis* of ancient Rome at about eight-pence English. Estimating the *as* therefore at a pound weight, the *sestertium pondus* was equal to 1000 *sestertii*, or L. 8 : 6 : 8; and by a coincidence which our author supposes to have been the effect of design, as soon as the silver coinage appeared, the *sestertium centum denariorum* was always equal to L. 8, 6s. 8d. also. The word *sestertium* itself, however, seems to have been unknown prior to the coinage of silver money at Rome: the *pondera gravis aris* being sufficient before that time for all the purposes of a state in which money was so scarce. But however this may be, the *pondus* or hundred weight of brass was precisely worth 100 denarii, or a pound of silver. As the great *sestertium* was always valued at 1000 of the smaller, or L. 8 : 6 : 8, we never find one *sestertium* mentioned in authors, but two, three, or more; ten thousand of them being equal to L. 8,333,333 : 6 : 8.

43
Whence
the Ro-
mans deri-
ved their
coinage.

The states from which the Romans may be supposed first to have derived their coinage, were the Etruscans and the Greek colonies in Magna Grecia and Sicily. Joseph Scaliger, Gronovius, &c. contend that it was from the Sicilians that the Romans first derived their knowledge of money; but Mr Pinkerton argues that it was from the Etruscans. In confirmation of his opinion he appeals to the state of the Roman territories in the time of Servius Tullius, who is looked upon to have been the first who coined money at Rome. At that time the whole Roman dominion did not extend beyond ten miles round the city; and was entirely surrounded by the Etruscan and Latin states; Cuma being the next Greek colony to it that was of any consequence, and which was in the neighbourhood of Naples, at about the distance of 150 miles. Our author asks, Is it reasonable to think that the Romans received the use of money from the Etruscans and Latians who were their neighbours, or from the Greeks, who were at a distance, and at that time, as far as appears from their history, absolutely unknown to them? "If this argument (adds he) is strong with regard to the nearest Grecian colonies, what must it be with respect to Sicily, an island 300 miles distant from Rome, where it was not known, at that time, if a boat went by land or water?" Arguments, however, for this opinion, have been derived

Ancient
Money.

from the similarity betwixt the Sicilian and Roman coins; which Mr Pinkerton now proceeds to examine. The Greek pound in Sicily was called *λίτρα*, and consisted, like the Roman, of 12 *οὐγκιαί*, or ounces; and Mr Pinkerton grants that the Roman *libra* was derived from the Greek *λίτρα*, but denies that the *as*, or *libra*, a coin, was from Sicilian model. The Sicilians had indeed a coin named *λίτρα*; but it was of silver, and of equal value to the Æginean standard, ten of which went to the Sicilian *δραχμή λίτρον*. He differs from Gronovius, that the standard of Ægina was used at Corinth, and of course at Syracuse; as it appears from Aristotle, that the Sicilians had a talent or standard of their own. The Sicilian obolus or *λίτρα* contained also 12 ounces or *chalci*, so named at first because they weighed an ounce weight; but the *οὐγκιαί* of Hiero weigh more than a troy ounce; and the brass coins of Agrigentum are marked with cyphers as far as six: the largest weighing only 186 grains, or about one third of the primitive ounce. Our author denies that even the Roman denarius took its rise from the Sicilian *δραχμή λίτρον*, as many authors assert. Were this the case, it would have weighed 180 grains; whereas the Roman denarii are not above the third part of the quantity.

From all these considerations, our author is of opinion that the Sicilians borrowed the division of their *λίτρα* from the Etruscans, or possibly from the Romans themselves; which our author thinks is more probable than that the Romans had it from Sicily. The strongest argument, however, against the Roman coinage being borrowed from the Sicilian is, that though great numbers of Sicilian coins are to be found in the cabinets of medallists, yet none of them resemble the *as libralis* of the Romans in any degree. In most cabinets also there are Etruscan coins upon the exact scale of the *as libralis*, and several of its divisions; from whence Mr Pinkerton concludes, that "these, and these alone, must have afforded a pattern to the primitive Roman coinage." The Etruscans were a colony from Lydia, to which country Herodotus ascribes the first invention of coinage. "Those colonists (says Mr Pinkerton), upon looking round their settlements, and finding that no silver was to be had, and much less gold," supplied the mercantile medium with copper; to which the case of Sweden is very similar, which, as late as the last century, had copper coins of such magnitude, that wheel-barrows were used to carry off a sum not very considerable.

Some coins are found which exceed the *as libralis* in weight; and these are supposed to be prior to the time of Servius Tullius. Some of them are met with of 34 and of 53 Roman ounces; having upon one side the figure of a bull rudely impressed, and upon the other the bones of a fish. They are most commonly found at Tuder, or Tudertum in Umbria; but they appear always broken at one end: so that Mr Pinkerton is of opinion that perhaps some might be struck of the decussis form, or weighing ten pounds. These pieces, in our author's opinion, make it evident, that the Romans derived their large brass coins from the Etruscans and the neighbouring states: they are all cast in moulds; and the greater part of them appear much more ancient than the Roman ases, even such as are of the greatest antiquity.

Mr

46
Origin of
the Sicilian
coins.47
Of the most
ancient Ro-
man coins.

Ancient
Money.Ancient
Money.48
Subdivi-
sions of the
as.49
Larger de-
nomina-
tions of it
struck.50
Decrease of
the as in
weight.

Mr Pinkerton agrees with Sir Isaac Newton as to the time that Servius Tullius reigned in Rome, which he supposes to be about 460 B. C. His coinage seems to have been confined to the as, or piece of brass having the impression of Janus on the one side and the prow of a ship on the other, because Janus arrived in Italy by sea. Varro, however, informs us, that the very first coins of Tullius had the figure of a bull, or other cattle upon them, like the Etruscan coins, of which they were imitations. Those with the figure of Janus and the prow of a ship upon them may be supposed first to have appeared about 400 B. C. but, in a short time, various subdivisions of the as were coined. The *femis* or half is commonly stamped with the head of Jupiter laureated; the *triens* or third, having four cyphers, as being originally of four ounces weight, has the head of Minerva; the *quadrans* or quarter, marked with three cyphers, has the head of Hercules wrapt in the lion's skin; the *sextans* or sixth, having only two cyphers, is marked with the head of Mercury with a cap and wings; while the *uncia* having only one cypher, is marked with the head of Rome. All these coins appear to have been cast in moulds, by a considerable number at a time; and in the British museum there are four of them all united together as taken out of the mould in which perhaps dozens were cast together. In process of time, however, the smaller divisions were struck instead of being cast; but the larger still continued to be cast until the as fell to two ounces. Even after this time it was still called *libra*, and accounted a pound of copper; though there were now larger denominations of it coined, such as the *biffas* or double as: *treffis* and *quadruffis* of three and four ases; nay as far as *decussis* or ten ases, marked X. Olivieri mentions one in his own cabinet weighing upwards of 25 ounces, and cast when the as was about three ounces weight. There is likewise in the Musæum Etruscum a *decussis* of 40 Roman ounces, cast when the as was at four ounces. There was likewise a curious *decussis* in the Jesuit's library at Rome, for which an English medallist offered 20l.; but it was seized by the Pope along with every other thing belonging to the society.

Mr Pinkerton contests the opinion of Pliny that the as continued of a pound weight till the end of the first Punic war. His opinion (he says) is confirmed by the coins which still remain; and it appears probable to him that the as decreased gradually in weight; and, from one or two of the pieces which still exist, he seems to think that the decrease was slow, as from a pound to eleven ounces, then to ten, nine, &c.; but neither the as nor its parts were ever correctly sized. During the time of the second Punic war, when the Romans were fore pressed by Hannibal, the as was reduced to a single ounce. It is said to have taken place in the 215th year before our era, being about 36 years after the former change. This as *libralis*, with the face of Janus upon it, is the form most commonly met with previous to its being reduced to two ounces. Our author supposes that the as *libralis* continued for at least a century and an half after the coinage of Tullus, down to 300 B. C. about the year of Rome 452, between which and the 502d year of Rome a gradual diminution of the as to two ounces must have taken place. The following table

of the dates of the Roman coinage is given by Mr Pinkerton.

The *libralis*, coined by Tullus with the figures of oxen, &c. about 167 years after the building of Rome, according to Sir Isaac Newton, or about the year before Christ

As <i>libralis</i> with Janus and the prow of a ship	460
As of ten ounces	400
Eight	300
Six	290
Four	280
Three	270
Two, according to Pliny	260
One, according to the same author	250
	214

About 175 B. C. also, we are informed by Pliny, that the as was reduced to half an ounce by the Papyrian law, at which it continued till the time of Pliny himself, and long after.

After the Romans began to have an intercourse with Greece, a variety of elegant figures appear upon the parts of the as, though not on the as itself till after the time of Sylla. Towards the latter end of the republic also, *dupondii*, or double ases, were coined, together with the *sestertii ærei*, which came in place of the *quadruffes*, when the denarius began to be reckoned at 16 ases; probably at the time the latter was reduced to half an ounce. In some instances it is to be observed, that the Romans accommodated their coins to the country where their army was stationed; whence we have many coins marked as Roman, which have been coined in Magna Grecia and Sicily, and are evidently upon the Greek scale, and not the Roman scale. In the latter part of the republican times, also, the types begin to vary; so that we have a brass coin supposed to be struck by Sextus Pompeius in Sicily, having upon it a double head of that warrior, representing a Janus. Mr Pinkerton supposes it to have been a *dupondius*; which indeed appears to be the case from the double head. This coin is of copper, and still weighs an ounce, notwithstanding its antiquity.

The largest imperial copper coin was the *sestertius*, a piece worth about two-pence of our money. Mr Pinkerton censures severely the opinion of other medallists, all of whom say that the *sestertius* was of silver. "In fact (says he), it would be as rational in any antiquary, a thousand years hence, to contend that the halfpenny and farthing are of silver, because they were so in the reign of Henry VIII." In confirmation of his own opinion, he quotes the following passage from Pliny: "The greatest glory of brass is now due to the Marian, called also that of Cordova. This, after the Livian, most absorbs the lapis calaminaris, and imitates the goodness of native orichalcum. In our *sestertii* and *dupondiarum*, the ases being contented with their own copper." Gronovius confesses that he does not know what to make of this passage, and that it causes him hesitate in his opinion. The *Livian* mine mentioned here by Pliny, is supposed to have got its name from *Livia* the wife of Augustus; and it is probable that the pieces marked with her portrait, intitled *JUSTITIA*, *SALUS*, *VIRTUS*, &c. were *dupondii* from this very mine, the metal being exceedingly fine, and of the kind named *Corinthian brass* by the ancient medallists. "Perhaps (says Mr Pinkerton) the mine received its name from this very

Ancient
Money.

circumstance of her coins being struck in the metal taken from it."

53
Coinage
of yellow
brass.

No change took place in the Roman coinage from the time that the *as* fell to half an ounce to the days of Pliny: but Mr Pinkerton observes, that before the time of Julius Cæsar yellow brass began to be used, and was always looked upon to be double the value of Cyprian or red copper. There are but few coins in large brass immediately before Julius Cæsar, or even belonging to that emperor; but from the time of Augustus downward, the large coins are all found of brass, and not one of them copper. The largest of what are called the middle size are all of yellow brass; and the next size, which is the *as*, and weighs half an ounce, is universally copper. What the ancients named *orichalcum*, or what we call *brass*, was always looked upon to be greatly superior in value to the *as* cyprium. Procopius, speaking of a statue of Justinian, tells us, that brass inferior in colour to gold is almost equal in value to silver. The mines of native brass were very few in number, and were owing entirely to the singular combination of copper and lapis calaminaris in the bowels of the earth, which very seldom occurs; and the ancients were far from being well acquainted with the method of combining these two bodies artificially; so that yellow brass was always esteemed at double the value of copper: and hence, in the ancient coinages, the brass and copper pieces were kept as distinct as those of gold and silver.

Mr Pinkerton challenges to himself the discovery that the imperial *sestertius* was of brass; and is at considerable pains to bring proofs of it. Besides the testimony of Pliny, which of itself would be decisive, this is supported by the strongest collateral evidence of other authors. From a passage in Julius Africanus, who wrote the *ἱατρικὰ*, or *Treatise on Medicine*, it appears that the *nummus*, or *sestertius*, weighed an ounce, and of consequence that it could not be silver but brass; and all the large imperial Roman coins weigh an ounce. We know not the age in which Julius Africanus lived; but as he makes the *denarius* to contain 16 *ases*, he must have been before the age of Gallienus, when it had 60. Gronovius supposes him to have been the same mentioned by Eusebius. This author speaks of a Julius Africanus who lived in the time of Heliogabulus, and whom Mr Pinkerton supposes to have been the same with him above mentioned.

54
Diminution
of the se-
stertius.

The *sestertius* underwent no change till the time of Alexander Severus, when it was diminished by one third of its weight. Trajanus Decius was the first who coined double *sestertii*, or *quinarii*, of brass; but from the time of Trebonianus Gallus to that of Gallienus, when the first brass ceases, the *sestertius* does not weigh above the third part of an ounce: the larger coins are accounted double *sestertii*; and after the time of Gallienus it totally vanishes. In the time of Valerian and Gallienus we find a new kind of coinage, mentioned by the name of *denarii æris*, or *Philippi ærei*. Two sizes of *denarii* began to be used in the time of Caracalla; the larger of six *sestertii*, or 24 *assaria*; the smaller of four *sestertii*, or 16 *assaria* as usual. In the time of Pupienus, the latter was reduced to such a small size as not to weigh more than 36 grains; though in Caracalla's time it weighed 56.

After the time of Gordian III. the smaller coin fell into disuse, as breeding confusion. The larger *denarius* of six *sestertii*, though diminished at last to the size of the early *denarius*, still retained its value of six *sestertii*, or 24 *assaria*. The *Philippus æreus* came at length in place of the *sestertius*. It was also called *denarius*; from which we may learn not only their size, but that they were in value ten *assaria* as the first *denarius*. In the reign of Dioclesian, the place of the *sestertius* was supplied by the *folles*, that emperor having restored the silver coin to its purity, and likewise given this form to the copper; but it would seem that this restoration of the coinage only took place towards the end of his reign; whence we have but few of his silver coins, and still fewer of the *folles*, though the *denarii ærei* continue quite common down to the time of Constantine. The *folles* of Dioclesian seems to have weighed above half an ounce; and Mr Pinkerton is of opinion, that Dioclesian designed this coin to supply the place of the *denarius æreus*; which of course was worth ten *assaria*, and six of them went to the silver *denarius*. From this time the *assarium* diminishes to the size of 30 grains; and soon after the *folles* appeared, the *denarius æreus* was entirely dropped, the former having gradually supplied its place. Some mints appear to have retained the use of the *denarius* longer than others; and in some the change was preceded, and gradually brought in by washing the *folles* with silver or tin, as the *denarius* had formerly been. Pieces of this kind occur in the times of Dioclesian, Maximian I. and II. and Constantius I.; that is, for about ten years after the *folles* made its appearance. Some countries, however, retained the *denarius æreus*; others the *folles*; and some had a medium betwixt the two, or the *folles* washed in imitation of the *denarius*.

Towards the end of the reign of Constantine I. a new coinage was introduced throughout the whole empire. The *folles* coined by this prince was of half an ounce weight; 24 of them going to the *milliaren-* ⁵⁵ *folles*, or larger silver coin. The word *folles* signifies also a purse, in which sense we sometimes find it mentioned in the Byzantine history. The common *folles* of silver, when it occurs by itself, means a purse of 250 *milliarense*s, as the *sestertium* was 250 *denarii*; and by a law of Constantine I. every man paid to the state a *folles* or purse according to his income. The method of counting by purses continues in Turkey to this day.

The *dupondius* was only half the value of the *sestertius*, or about one penny Sterling; and before the yellow brass appeared it seems to have been struck upon copper, and double the size of the *as*. There are some of this coin, struck in the time of Julius Cæsar, in yellow brass, weighing half an ounce, with a head of Venus Victrix upon one side; on the reverse, a female figure, with serpents at her feet: while others have a Victory on the reverse, with Q. Oppius Pr. After the time of Augustus, the *dupondius* was struck in yellow brass; which Pliny tells us was also the case in his time. The word *dupondarius* seems to have been used by Pliny, and adopted, not to express that the coin was *dupondius*, but that it was of *dupondiar*y value. Neither was the former word confined to signify double weight, but was used also for double length or measure, as in the instance of *dupondius pes*, or two feet, &c. In the imperial

Ancient
Money.55
New coin-
age intro-
duced by
Constantine I.56
Of the du-
pondius.

Ancient Money.

Ancient Money.

perial times, therefore, *dupondius* was used, not to signify a coin of double the weight of the as, but of double the value. It was one of the most common of the Roman coins; and seems to have been very common even in Constantinople. In the time of Justinian, it seems there was a custom of nicknaming young students of the law *dupondii*, against which the emperor made a law; but it is not known what gave rise to the name. The *dupondius*, though of the same size with the as, is commonly of finer workmanship, the metal being greatly superior in value. It continues to be of yellow brass, as well as the *sestertius*, to the time of Gallienus; but the as is always of copper.

57
Of the as-
farium.

The imperial as, or *asfarium*, was worth only an halfpenny. At first it weighed half an ounce, and was always of copper till the time of Gallienus, when it was made of brass, and weighed only the eight part of an ounce. From the time of Gallienus to that of Dioclesian, it continued to diminish still more, the size being then twenty to an ounce. This was the same with the *lepta*, or smallest coins but the *noumia*, which weighed only ten grains.

58
Parts of
the as.

The parts of the as occur but seldom; which may, indeed, be well expected, considering the low value of it; though there still occur some of those called *femis*, *triens*, *quadrans*, *sextans*, and *uncia*, coined in the times of Nero and Domitian. There is no small brass from the time of Pertinax to that of Gallienus, excepting that of Trajanus Decius; but in the time of Gallienus it becomes extremely common; and the coins of small brass, as well as the larger, are always marked S. C. such as want it being universally accounted forgeries, and were plated with silver, though the plating be now worn off. The small pieces struck for slaves during the time of the *saturnalia* must also be distinguished from the parts of the as. The S. C. upon these most probably signifies *Saturni Consul*, and were struck in ridicule of the true coins, as the slaves on that occasion had every privilege of irony.

59
Of the
smallest
Roman
coins.

The *sestertius* diminishes from Pertinax to Gallienus so fast that no parts of the as are struck, itself being so small. Trajanus Decius, indeed, coined some small pieces, which went for the *femis* of the time. The small brass coins under Gallienus were called *asfaria*, sixty of which went to the silver denarius. They are about the size of the denarius, and some of them occur of the coinage of Gallus and his family, of half that size, which appear to have been struck during the latter part of his reign, when the *asfarium* was diminished to a still smaller size. It is probable, however, that some of these very small coins had been struck in all ages of the empire, in order to scatter among the people on solemn occasions. Mr. Pinkerton is of opinion that they are the *missilia*, though most other medallists think that they were medallions. "But if so (says our author), they were certainly called *missilia* a *non mittendo*; for it would be odd if fine medallions were scattered among the mob. It is a common custom just now to strike counters to scatter among the populace on such occasions, while medals are given to peers of the kingdom; and we may very justly reason from analogy on this occasion."

60
Of the mis-
silia.

The *asfarion* or *leptan* of the Constantinopolitan em-

pire was, as we have already observed, one of the smallest coins known in antiquity, weighing no more than 20 grains; and the *noumia* were the very smallest which have reached our times, being only one-half of the former. By reason of their extreme smallness, they are very scarce; but Mr. Pinkerton informs us, that he has in his possession a fine one of Theodosius II. which has on it the emperor's head in profile. Theodosius P. F. AV.; on the reverse a wreath, having in the centre *VOT. XX. : MULT. XXX.*

The principal coin of the lower empire was the *folis*, which was divided into an half and quarter, named *μισσοβολις* and *τεταρτον*; the latter of which is shown by Du Cange to have been a small brass coin, as the other is supposed to have been by Mr. Pinkerton.— Besides these, the *folis* was divided into 8 *oboli*, 16 *asfaria* or *lepta*, and 32 *noumia*, though in common computation it contained 40 of these last. This coin, notwithstanding so many divisions, was of no more value than an halfpenny.

61
Coins of
the lower
empire.

Mr. Pinkerton controverts an opinion, common among medallists, that the largest brass coin or *folis* of the lower empire had 40 small coins, expressed by the letter M upon it; the next had 30, expressed by the letter A; the half by the letter K; and the quarter marked I, which contained only 10. Mr. Pinkerton informs us, that he has three coins of Anastasius, all marked M in large: one of them weighs more than half an ounce; the second 40 grains less; and the third of 160 grains, or one-third of an ounce; but the size is so very unequal, that the last, which is very thick, does not appear above half the size of the first. There are pieces of Justinian which weigh a whole ounce; but the size of copper was increased as the silver became scarcer; and the value of the coinage cannot be deduced from the weight of the coins, as it is plain that our own coinage is not of half the value with regard to the metal. A great number of medallions were struck by Constantius II. but there is no other copper larger than the half ounce, excepting that of Anastasius, when the *folis* began to be struck larger. All medallists allow the others to be medallions.

The metal employed in these very small coins, though at first of brass, was always a base and refuse kind; but copper is generally made use of in the parts of the as from the earliest times to the latest; and if brass be sometimes employed, it is never such as appears in the *sestertii* and *dupondiarum*, which is very fine and beautiful, but only the refuse. "Yellow brass of the right sort (says Mr. Pinkerton) seems totally to have ceased in the Roman coinage with the *sestertius*, under Gallienus, though a few small coins of very bad metal appear under that hue as late as Julian II."

Silver was coined in Rome only as late as the 485th year of the city, or 266 B. C. Varro indeed speaks of silver having been coined by Servius Tullius, and the *libella* having been once in silver; but Pliny's authority must be accounted of more weight than that of this author, as he mistakes the *λίτρα* of Sicily for Roman coins, having been current at Rome during the time of the first Punic war. Even Pliny, according to our author, very frequently mistakes with regard to matters much antecedent to his own time; and among

62

Ancient
Money.

among the moderns he criticises severely Erasmus and Hume. "Erasmus (says he), who had been in England for some time, talks of leaden money being used here. Not even a leaden token was struck in the reign of Henry VIII.; yet his authority has been followed with due deference to so great a name; for how could Erasmus, who must have seen the matter with his own eyes, assert a direct falsehood? To give a later instance in a writer of reputation, Mr Hume, in vol. vi. of his history, has these words, in treating of the reign of James I. "It appears that copper halfpence and farthings began to be coined in this reign. Tradesmen had commonly carried on their retail business by leaden tokens. The small silver penny was soon lost; and at this time was nowhere to be found." Copper halfpence and farthings were not struck till Charles II. 1672: there were small tokens for farthings struck in copper by James I. but not one for the halfpenny. The silver farthings had ceased with Edward VI. but the silver halfpence continued the sole coins till Charles II. It was by copper tokens that small business was carried on. The silver penny was much used till the end of the reign of George I.; and, so far from being nowhere to be found, is superabundant of every reign since that period, not excepting even the present reign of George III. From these instances the reader may judge how strangely writers of all ages blunder, when treating a subject of which they are entirely ignorant."

63
Denarii
when first
coined.

The first silver denarii coined at Rome, are supposed by our author to have been those which are impressed with the ROMA; and he inclines to account those the most ancient which have a double female head on the one side, and on the reverse Jupiter in a car, with Victory holding the reins, and the word ROMA indented in a rude and singular manner. The double female head seems to denote Rome, in imitation of the Janus then upon the as. There are 15 of these in the cabinet of Dr Hunter; one of the largest weighs $98\frac{1}{4}$ grains: and the rest, which seem to be of greatest antiquity, are of various weights betwixt that and 84; the smaller and more modern weigh 58 or 59 grains; but Mr Pinkerton is of opinion, that the large ones are of the very first Roman coinage, and struck during that interval of time betwixt the coinage of the first silver denarius and the as of two ounces. He takes the indentation of the word ROMA to be a mark of great antiquity; such a mode being scarcely known any where else, except in Caulonia, Crotona, and other towns of Italy; all of them allowed to be struck at least 400 B. C. As these large coins are not double denarii, they must have been struck prior to the small ones; and Newmann has given an account of one of them recoined by Trajan, in which the indentation of ROMA is carefully preserved. The first denarius was in value 10 ases, when the as weighed three ounces; and allowing 90 grains at a medium for one of these large denarii, the proportion of copper to silver must have been as 1 to 160; but when the as fell to one ounce, the proportion was as 1 to 80: when it fell to half an ounce, so that 16 ases went to the denarius, the proportion was as 1 to 64, at which it remained. Copper with us, in coinage, is to silver as 1 to 40; but in actual value as 1 to 72.

At Rome the denarius was worth 8d.; the quina-
N^o 201.

rius 4d.; and the sestertius, whether silver or brass, 2d. The denarius is the coin from which our penny is derived, and was the chief silver coin in Rome for 600 years. According to Celsus, seven denarii went to the Roman ounce, which in metals did not exceed 430 grains; but as all the denarii hitherto met with weigh at a medium only 60 grains, this would seem to make the Roman ounce only 420 grains; though perhaps this deficiency may be accounted for from the unavoidable waste of metal even in the best preserved of these coins. According to this proportion the Roman pound contained 84 denarii; but in tale there was a very considerable excess; for no fewer than 100 denarii went to the Roman pound. The Greek ounce appears to have been considerably larger than that of Rome, containing about 528 grains; yet notwithstanding this apparently great odds, the difference in the coins was so small, that the Greek money went current in Rome, and the Roman in Greece. The denarius at first went for 10 asses, and was marked X; it was afterwards raised to 16; which Mr Pinkerton supposes to have been about 175 B. C. Some are met with bearing the number XVI. nay, with every number up to CCCCLXXVI. These large numbers are supposed to have been mint-marks of some kind or other. After being raised to 16 ases, it continued at the same value till the time of Gallienus; so that till that time we are to look upon its constituent parts to be 16 ases or assaria, eight dupondii, four brasses sestertii, and two silver quinarrii. Under the emperor Severus, however, or his successor Caracalla, denarii were struck of two sizes, one of them a third heavier than the common; which we must of consequence suppose to have borne a third more value. This large piece obtained the name of *argenteus*, and *argenteus Philippus*, or the "silver Philip;" the name of Philip having become common to almost every coin. The common denarii now began to be termed *minuti* and *argentei Philippi minutuli*, &c. to express their being smaller than the rest. Some have imagined that the large denarii were of the same value with the small, only of worse metal; but Mr Pinkerton observes, that among the few which have any difference of metal, the smallest are always the worst. The first mention of the *minuti* is in the time of Alexander Severus, who reduced the price of pork from eight minuti at Rome to two and to one. The *minutus argenteus* of that age was about 40 grains; and from the badness of the metal was not worth above 4d. of our money. Thus the price of meat was by this prince reduced first to 8d. and then to 4d.

According to Zozimus and other writers, the purity of the Roman coin was restored by Aurelian: but Mr Pinkerton controverts this opinion; thinking it more probable, that he only made the attempt without success; or that his reformation might be entirely confined to gold, on which there is an evident change after the time of this emperor. His successor Tacitus is said to have allowed no brass to be mixed with silver upon any account; yet the few coins of this emperor are very much alloyed. We are certain, however, that the emperor Dioclesian restored the silver to its ancient purity; the denarii struck in his reign being very small indeed, but of as fine silver as the most ancient coins of the empire. After Gordian

Ancient
Money.[63]
Value of
the denarius
and its
parts.

64

Restoration
of the pu-
rity of the
Roman
coins.

Ancient
Money.

dian III. the small denarius entirely vanished, while the large one was so much diminished, that it resembled the *minutus*, or small one of Caracalla in size. Gallienus introduced the *denarii ærei* instead of the *sestertii*. The *argenteus*, though reduced more than one third in size, contained six denarii ærei, the old standard of sestertii. According to the writers of this period, and some time afterwards, the denarius or argenteus contained 60 assaria; whence it follows, that each denarius æreus had 10; and from this it probably had its name. The assaria are of the size of the argentei already mentioned; and show the copper to have retained nearly its old proportion of value to the silver, viz. 1 to 60.

65
Reformation of the
silver coin
by Constantine.

A larger silver coin was introduced by Constantine I. who accommodated the new money to the pound of gold in such a manner, that 1000 of the former in tale were equal to the latter in value; so that this new piece from thence obtained the name of the *milliarenfis* or "thousander." Its weight at a medium is 70 grains, or 70 to the pound of silver: but Mr Pinkerton is of opinion, that it might have contained 72 grains, of which two have now perished by the softness of the silver; that the pound contained 72; or that two of the number might be allowed for coinage; while the alloy alone would pay for coining gold. The code says, that 60 went to the pound; but the numbers of this are quite corrupt. The *milliarenfis* was worth about a shilling sterling. The argentei or denarii, however, were still the most common currency; and having been originally rated at the 100 to the pound of silver in tale, they from thence began to be called *centenionales*, or "hundreders." Those of Constantine I. and II. Constans, and Constantius, weigh from 50 grains down to 40; those of Julian and Jovian, from 40 to 30; and of the succeeding emperors from that time to Justinian, from 30 to 20. Under Heraclius they ceased entirely; and from Justinian to their total abolition, had been brought down from 15 to 10 grains. A like decrease of weight took place in the *milliarenfis*; those of Constantine and Constans being above 70 grains in weight; those of Arcadius not above 60; and the *milliarenfis* of Justinian not more than 30 grains; but, from the weight of those in Dr Hunter's cabinet, Mr Pinkerton deduces the medium to have been exactly $70\frac{8}{7}$ grains. These coins were also called *majorina*.

66
Account of
the small
Roman
coins.

The smaller silver coins of Rome were, 1. The *quinarius*, at first called *victriciatus*, from the image of Victory on its reverse; and which it continued to bear from first to last. Its original value was five asses, but it was afterwards raised to eight, when the value of the denarius increased to 16. According to Pliny, it was first coined in consequence of the *lex Clodia*, about the 525th year of Rome. Some are of opinion, that it was called *κερατιον* under the Constantinopolitan empire, because it was worth a *κερατιον* of gold, 144 of which went to the ounce: but this is denied by Mr Pinkerton, because at the time that the word *κερατιον* first appears in history, the denarius did not weigh above 30 grains; and of consequence, as 25 must have gone to the gold solidus, of which there were six in the ounce, 130 denarii must have gone to the ounce of gold. He is therefore of opinion, that the word

VOL. XI. Part I.

κερατιον was only another name for the denarius when much reduced in size; probably owing to the great scarcity of silver in Constantinople, though in the same city there was plenty of gold; and of consequence, the gold solidus was never diminished. "For Montefquieu (says our author) has well observed, that gold must be common where silver is rare. Hence gold was the common regulation of accounts in the Eastern empire." The *δισκερατιον* met with in ancient authors, according to Mr Pinkerton, was merely an improper name for the *milliarenfis*; when, on account of the scarcity of silver, the denarius was reduced, and no *milliarenfis* coined: so that the current *milliarenfis* of former reigns happened to be double to the denarius or *centenionalis*. The *quinarius* diminishes in size along with the other coins: those of Augustus weighing 30 grains, of Severus 25, of Constantine I. 20, of Justinian 12, and of Heraclius only 5. A new silver coinage seems to have taken place after the days of this emperor; as the little we then meet with, which in the best cabinets scarce exceeds a dozen of coins, consists entirely of large unshapely pieces of coarse metal.

2. The consular denarius had also four silver sestertii, till the as fell to half an ounce, when it was thought proper to coin the sestertius in brass, as it continued to be ever afterwards. "The very last silver sestertius (says Mr Pinkerton) which appears, is one with a head of Mercury, and H. S.; on the reverse a Caduceus P. SEPVLLIVS; who appears to be the P. SEPVLLIVS MACER of the denarii of Julius Cæsar. If so, as is most probable, the sestertius was coined in silver down to Augustus; and it is of course not to be expected that any of brass can appear till Augustus, under whom they are actually quite common. I have indeed seen no coin which could be a consular brass sestertius; and tho' we have certainly brass dupondii of Cæsar, yet it is reasonable to infer, that the brass sestertius was first coined by Augustus. Not one silver sestertius appears during the whole imperial period, yet we know that the sestertius was the most common of all silver coins. The consular sestertii of silver, marked H. S. are not uncommon, nor the quinarii; but the latter are very scarce of all the emperors, if we except one instance, the *ASIA RECEPTA* of Augustus.

67
Divisions of
the denarius.

"The Roman gold coinage was still later than that of silver. Pliny tells us, that "gold was coined 62 years after silver; and the scruple went for 60 sesterces. It was afterwards thought proper to coin 40 pieces out of the pound of gold. And our princes have by degrees diminished their weight to 45 in the pound." This account is confirmed by the pieces which still remain; for we have that very coin weighing a scruple, which went for 20 sesterces. On one side is the head of Mars, and on the other an eagle; and it is marked XX. We have another coin of the same kind, but double, marked XXXX; and its triple, marked ♃ or 60; the ♃ being the old numeral character for 50." Mr Pinkerton, the discoverer of this, treats other medallists with great asperity. Savot and Hardouin are mentioned by name; the latter (he says) is "ignorant of common sense;" and neither he nor Savot could explain it but by reading

68

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Ancient
Money.

backward; put the $\downarrow$ for the Roman V, and thus making it xv. Other readings have been given by various medallists, but none have hit upon the true one excepting our author, though the coin itself led to it; being just three times the weight of that marked xx. We have likewise half the largest coin, which is marked xxx, and which weighs 26 grains; the smallest is only $17\frac{1}{2}$; the xxxx weighs 34; and the lx or drachma 53. There is also the didrachm of this coinage, of 106 grains.

69
Account of
the aurei.

The *aurei* or Roman gold coins, were at first 48 in the pound; but they were afterwards diminished in number to 40, owing to an augmentation in the weight of each coin. In the time of Sylla, the aureus weighed no less than from 164 to 168 grains, and there were only 30 in the pound; but such confusion in the coinage was introduced by that conqueror, that no person could know exactly what he was worth. Till this time the aureus seems to have continued of the value of 30 silver denarii, about one pound sterling; for about that time it was enlarged a whole third, that it might still be equivalent to the full number of denarii. But after Sylla had taken Athens, and the arts and manners of Greece became objects of imitation to the Romans, the aureus fell to 40 in the pound, probably when Sylla had abdicated his dictatorship. Thus, being reduced near to the scale of the Greek $\chi\rho\rho\rho$, it passed for 20 denarii, as the latter did for as many drachmas, being in currency 13s. 4d. sterling. "This (says Mr Pinkerton) is the more probable, because we know from Suetonius, that the great Cæsar brought from Gaul so much gold, that it sold for nine times its weight of silver: but the Gallic gold was of a very base sort."

In the time of Claudius, the aureus was valued at 100 sesterii, or 25 silver denarii, at which it continued till the time of Heliogabalus, when it fell to about 92 grains at a medium, or rose in number to 55 in the pound. In the reign of Philip, during which the city completed its thousandth year, the aureus was coined of two or three sizes. These are impressed with a head of Rome on one side, and various figures on the other; but the workmanship is so rude, that they are supposed to have been struck in some of the more uncivilized provinces of the empire. The practice of having different gold coins, however, continued under Valerian, Gallienus, and his successors. In the time of Gallienus, they were of 30, 65, and from 86 to 93 grains; the double aurei being from 172 to 183 $\frac{1}{2}$ grains; but the aureus properly so called was from 86 to 93; those of 30 and 32 being the *trientes aurei* of the *Historia Augusta Scriptores*; while the larger, from 62 to 65, are to be accounted double *trientes*, and were perhaps called *minuti aurei*. The value of these different sizes of aurei is not known.

70
Alteration
in the gold
coin made
by Aure-
lian.

That Aurelian made some alteration in the coin is certain; but Mr Pinkerton supposes it to have been only in the gold; because under him and his successor Probus, the common aureus was of 100 grains, a size confined to those emperors: there are likewise halves of about 50 grains; and double aurei, commonly of very fine workmanship, of upwards of 200 grains. In the time of Gallienus, the precious metal was so common, that this emperor vied in magnificence with Nero and Heliogabalus. Aurelian, who plundered the

rich city of Palmyra, and thus became master of the treasures of the east, obtained such a profusion of gold, that he looked upon it to be produced by nature in greater plenty than silver. It is remarkable, that during this emperor's reign there was a rebellion among the money-coiners, which could not be quelled but by the destruction of several thousands; which Mr Pinkerton ascribes to his having ordered the gold to be restored to its former size, but to go for no more silver than it formerly did. "So very little silver (says he) occurs of this period, that it is plain no alteration in the silver produced the war with the moneyers: and in the brass he made no change; or if he had, it were strange that such commotions should arise about so trifling a metal. But if, as appears from the coins, he ordered the aureus, which had fallen to 80 grains, to be raised to about 100, it is no wonder that the contractors should be in an uproar; for a whole quarter of their coinage, amounting as would seem to all their profits, was lost. Aurelian judged, that when he found gold so common in the east, it was equally so in the west; and that the moneyers must have made a most exorbitant profit; but his ideas on this subject were partial and unjust: and after his short reign, which did not exceed five months after the alteration, the gold returned to its former course; though a few pieces occur of Aurelian's standard, struck, as would seem, in the commencement of the reign of Probus his successor.

From this time to that of Constantine I. the aureus weighed between 70 and 80 grains; but in his reign it was changed for the solidus, of which six went to the ounce of gold, which went for 14 milliareses, and 25 denarii as before; the value of silver being now to gold as 14 to 1. This new coin continued of the same value to the final downfall of the Constantinopolitan empire; gold being always very plentiful in that city, though silver became more and more scarce. The solidus was worth 12s. sterling. Here again our author most severely criticises Mr Clarke and Mr Raper: the former (he says) with respect to the value of gold in the time of Constantine I. "has left all his senses behind him. In page 267. he absurdly asserts, that 20 denarii went to the solidus in the time of Theodosius I. and proceeds with this deplorable error to the end of his work. He then tells us, that only 14 denarii went to the solidus under Constantine I. &c." To Mr Raper, however, he is a little more merciful, as he owns, that "though he (Mr Raper) has strangely confounded the milliaresis with the denarius, he has yet kept common sense for his guide." Mr Pinkerton argues, indeed with great probability, "that had any change in the coinage taken place between the time of Constantine and Theodosius I. that is, in less than 50 years, the laws of that period, which are all in the Theodosian code, must have noticed it." To this and other arguments upon the subject, Mr Pinkerton adds the following observation upon the value of gold and silver: "As a state advances to its height, gold increases in value; and as a state declines, it decreases, providing the metals are kept on a par as to purity. Hence we may argue, that gold decreased in its relation to silver perhaps four or five centuries, furnished most European kingdoms with gold in coin, which otherwise would, from their want of arts, and

Ancient
Money.

of

Ancient
Money.Ancient
Money.

of intercourse with the east, then the grand seminary of that metal, have almost been ignorant of what gold was. These gold coins were called *Bezants* in Europe, because sent from Byzantium or Constantinople; and were *solidi* of the old scale, six to the ounce. In Byzantine writers, the *solidus* is also called *nomisma*, or "the coin;" *crysinos*, because of gold; *hyperperos*, from its being refined with fire, or from its being of bright gold flaming like fire. The *solidi* also, as the *aurei* formerly, received names from the princes whose portraits they bore; as *Michelati*, *Manuelati*. *Solidus* is a term used also for the aureus by Apuleius, who lived in the time of Antoninus the Philosopher; nay, as early as in the Prætorian edicts of the time of Trajan. It was then a distinction from the *semissis* or half. In the time of Valerian, when aurei of different sizes had been introduced, it became necessary to distinguish the particular aurei meant. Hence in the Imperial Rescripts, published by the *Historia Augusta Scriptores*, Valerian uses the term *Philippeos nostri vultus*, for the common aurei. Aurelian uses the same term *aurei Philippii*, for the aurei which he had restored to their size in some degree. Gallienus uses *aurei Valeriani* for his father's coins. *Aurei Antoniniani* are likewise put by Valerian for coins of the early Antonini, of superior standard to any then used.

71
Divisions of
the aureus.

In the first gold coinage at Rome, the aureus was divided into four parts; the *semissis* of 60 sesterii; the *tremissis*, or third, of 40; the fourth, the name of which is not mentioned, of 30; and the *scrupulum* of 20. But in a short time all of these fell into disuse, except the *semissis* or half, which is extremely scarce; so that it is probable that few have been struck. It is an erroneous opinion (according to Mr Pinkerton) that the *semissis* was called a *denarius aureus*. The aureus itself indeed had this name; but the name of *quinarius* is applied to the *semissis* with greater propriety than the former. *Trientes*, or *tremisses* of gold, are found of Valerian and his son Gallienus, and weigh about 30 grains. Those of Salonina the wife of Gallienus weigh 33 grains. Under the Constantinopolitan empire, *tremisses* again make their appearance; and from the time of Valentinian downwards, the thirds are the most common coins of gold, being worth about 4s. sterling. The *semissis* is likewise mentioned, but none occur earlier than the time of Basiliscus. The gold *tremissis* was the pattern of the French and Spanish gold coins; as the silver *denarius*, in its diminished state, was of the Gothic and Saxon penny.

72
Account of
the Roman
method of
coining.

We shall close this account of the Roman money with some remarks concerning the mint, and method of coinage. This at first seems to have been under the direction of the *quæstor*. About the time that silver was first coined in Rome, viz. about 266 B. C. the *triumviri monetales* were created. They were at first of senatorial rank, but were by Augustus chosen from among the equestrian; and the title of *triumviri* was continued till after the time of Caracalla; but under Aurelian there was probably but one master of the mint called *Rationalis*; and Mr Pinkerton is of opinion that the change took place under Gallienus. He seems also to have permitted the provincial cities to coin gold and silver, as well as to have altered the form of the mints in the capital, and to have ordered them all to strike money with Latin legends, and of the

same forms; as in his time we first meet with coins with mint-marks of cities and offices. The violent insurrection which took place in his reign has already been mentioned, as well as its probable cause; and Mr Gibbon has shown, that the concealed enemies of Aurelian took such advantage of this insurrection, that it cost 7000 of his best troops before it could be quelled. About this time the *procurator moneta* seems to have succeeded the *rationalis* as director of the mint. In the colonies, the direction of the mint seems to have been given to the *decemviri*, whose names frequently occur on colonial coins; "which (says Mr Pinkerton), though generally of rude invention, and ruder execution, are yet often interesting and important."

The engraving of the ancient dyes used in coinage was a work of much genius and labour; and at Rome Greek artists were generally employed in it; but it has been thought a matter of great surprise, that scarce any two ancient coins are to be found exactly the same. Hence some antiquaries have imagined, that only a single coin was thrown off from each dye. M. Beauvais informs us, that the only two Roman imperial coins of the first times which he had seen perfectly alike were those of the Emperor Galba. It is, however, the opinion of the best judges, that a perfect similarity betwixt two medals is a very great reason for supposing one of them to be forged. "It must also be observed (says Mr Pinkerton), that the differences in coins, apparently from the same dye, are often so minute as to escape an eye not used to microscopic observations of this sort. But it would be surprising if any two ancient coins were now found struck with the same dye; for out of each million issued, not above one has reached us. Dyes soon give way by the violence of the work; and the ancients had no puncheons nor matrices, but were forced to engrave many dyes for the same coin. Even in our mint, upon sending for a shilling's worth of new halfpence, it will appear that three or four dyes have been used. Sometimes the obverse of the dye gives way, sometimes the reverse; but among us it is renewed by puncheons, though with variations in the lettering or other minute strokes; while the ancients were forced to recur to another dye differently engraven. The engravers of the dye were called *calatores*; other officers employed in the mint were the *speciatores*, *expectatores*, or *nummularii*. The melters were styled *fusarii*, *flatuarii*, and *flaturarii*; those who adjusted the weight were called *æquatores monetarum*; those who put the pieces into the dye *suppositores*, and those who struck them *malleatores*. At the head of each office was an officer named *primicerius*, and the foreman was named *optio et exactor*."

In order to assist the high relief on the coins, the metal, after being melted and refined, was cast into bullets, as appears from the ancient coins not being cut or filed on the edges, but often cracked, and always rough and unequal. These bullets were then put into the dye, and received the impression by repeated strokes of the hammer, though sometimes a machine appears to have been used for this purpose: for Boiterue informs us, that there was a picture of the Roman mintage in a grotto near Baïæ, where a machine was represented holding up a large stone as if to let it fall suddenly, and strike the coin at once. None of the ancient money was cast in moulds, except-

Preserva-
tion.

ing the most ancient and very large Roman brads, commonly called *weights*, and other Italian pieces of that sort; all the rest being mere forgeries of ancient and modern times. Some Roman moulds which have been found are a proof of this; and from these some medalists have erroneously imagined that the ancients first cast their money in moulds, and then stamped it, in order to make the impression more clear and sharp.

The ancients had some knowledge of the method of crenating the edges of their coins, which they did by cutting out regular notches upon them; and of this kind we find some of the Syrian and ancient consular coins, with a few others. The former were cast in this shape, and then struck; but the latter were crenated by incision, to prevent forgery, by showing the inside of the metal: however, the ancient forgers also found out a method of imitating this; for Mr Pinkerton informs us, that he had a Roman consular coin, of which the incisions, like the rest, were plated with silver over the copper.

SECT. VI. *Of the Preservation of Medals.*

WE now come to consider what it is that distinguishes one medal from another, and why some are so highly prized more than others. This, in general, besides its genuineness, consists in the high degree of preservation in which it is. This, by Mr Pinkerton, is called the *conservation* of medals, and is by him regarded as *good* and as *perfect*. In this, he says that a true judge is so nice, that he will reject even the rarest coins if in the least defaced either in the figures or legend. Some, however, are obliged to content themselves with those which are a little rubbed, while those of superior taste and abilities have in their cabinets only such as are in the very state in which they came from the mint; and such, he says, are the cabinets of Sir Robert Austen, and Mr Walpole of Strawberryhill. It is absolutely necessary, however, that a coin be in what is called *good* preservation; which in the Greek or Roman emperors, and the colonial coins, is supposed to be when the legends can be read with some difficulty; but when the conservation is perfect, and the coin just as it came from the mint, even the most common coins are valuable.

73
Brass and
copper best
preserved
by the rust
that covers
them.

74
Different
kinds of
this rust.

The fine rust, like varnish, which covers the surface of brass and copper coins, is found to be the best preserver of them; and is brought on by lying in a certain kind of soil. Gold cannot be contaminated but by iron mold, which happens when the coin lies in a soil impregnated with iron; but silver is susceptible of various kinds of rust, principally green and red; both of which yield to vinegar. In gold and silver coins the rust must be removed, as being prejudicial; but in brass and copper it is preservative and ornamental; a circumstance taken notice of by the ancients. "This fine rust (says Mr Pinkerton), which is indeed a natural varnish not imitable by the art of man, is sometimes a delicate blue, like that of a turquoise; sometimes of a bronze brown, equal to that observable in ancient statues of bronze, and so highly prized; and sometimes of an exquisite green, a little on the azure hue, which last is the most beautiful of all. It is also found of a fine purple, of olive, and of a cream colour or pale yellow: which last is exqui-

site, and shows the impression to as much advantage as paper of cream colour, used in all great foreign presses, does copperplates and printing. The Neapolitan patina (the rust in question) is of a light green; and when free from excrescence or blemish is very beautiful. Sometimes the purple patina gleams thro' an upper coat of another colour, with as fine effect as a variegated silk or gem. In a few instances a rust of a deeper green is found; and it is sometimes spotted with the red or bronze shade, which gives it quite the appearance of the East Indian stone called the *blood-stone*. These rusts are all, when the real product of time, as hard as the metal itself, and preserve it much better than any artificial varnish could have done; concealing at the same time not the most minute particle of the impression of the coin."

The value of medals is lowered when any of the letters of the legend are misplaced; as a suspicion of forgery is thus induced. Such is the case with many of those of Claudius Gothicus. The same, or even greater, diminution in value takes place in such coins as have not been well fixed in the dye, which has occasioned their slipping under the strokes of the hammer, and thus made a double or triple image. Many coins of this kind are found in which the one side is perfectly well-formed, but the other blundered in the manner just mentioned. Another blemish, but of smaller moment, and which to some may be rather a recommendation, is when the workmen through inattention have put another coin into the dye without taking out the former. Thus the coin is convex on one side, and concave on the other, having the same figure upon both its sides.

The medals said by the judges in this science to be *countermarked* are very rare, and highly valued. They have a small stamp impressed upon them, in some an head, in others a few letters, such as AUG: N. PROBUS, &c. which marks are supposed to imply an alteration in the value of the coin; as was the case with the countermarked coins of Henry VIII. and Queen Mary of Scotland. Some have a small hole through them; sometimes with a little ring fastened in it, having been used as ornaments; but this makes no alteration in their value. Neither is it any diminution in the value of a coin that it is split at the edges; for coins of undoubted antiquity have often been found in this state, the cause of which has already been explained. On the contrary, this cracking is generally considered as a great merit; but Mr Pinkerton suspects that one of these cracked coins has given rise to an error with respect to the wife of Carausius who reigned for some time in Britain. The inscription is read ORIUNA AUG: and there is a crack in the medal just before the O of oriuna. Without this crack Mr Pinkerton supposes that it would have been read FORTUNA AUG.

Some particular soils have the property of giving silver a yellow colour as if it had been gilt. It naturally acquires a black colour through time, which any sulphureous vapour will bring on in a few minutes. From its being so susceptible of injuries, it was always mixed by the ancients with much alloy, in order to harden it. Hence the impressions of the ancient silver coins remain perfect to this day, while those of modern coins are obliterated in a few years. On this

Preserva-
tion.

75
Medals
how dimi-
nished in
value.

75
Counter-
marked
medals.

76
Silver and
gold how
tarnished.

Preservation.

account Mr Pinkerton expresses a wish, that modern states would allow a much greater proportion of alloy in their silver coin than they usually do. As gold admits of no rust except that from iron above mentioned, the coins of this metal are generally in perfect conservation, and fresh as from the mint.

77
How to cleanse them.

To cleanse gold coins from this rust, it is best to steep them in aquafortis, which, though a very powerful solvent of other metals, has no effect upon gold. Silver may be cleansed by steeping for a day or two in vinegar, but more effectually by boiling in water with three parts of tartar and one of sea-salt; on both these metals, however, the rust is always in spots, and never forms an entire incrustation as on brass or copper. The coins of these two metals must never be cleansed, as they would thus be rendered full of small holes eaten by the rust. Sometimes, however, they are found so totally obscured with rust, that nothing can be discovered upon them; in which case it is best to clear them with a graver; but it may also be done by boiling them for 24 hours in water with three parts of tartar and one of alum; not sea-salt as in silver coins.

78
Why ancient coins are in such an high state of preservation.

The high state of preservation in which ancient coins are usually found, is thus accounted for by Mr Hancarville. He observes, that the chief reason is the custom of the ancients always to bury one or more coins with their dead, in order to pay for their passage over the river Styx. "From Phidon of Argos (says he) to Constantine I. are 36 generations: and from Magna Græcia to the Euphrates, from Cyrene to the Euxine Sea, Grecian arts prevailed, and the inhabitants amounted to about 30,000,000. There died therefore, in that time and region, not less than ten thousand millions of people, all of whom had coins of one sort or other buried with them. The tombs were sacred and untouched; and afterwards neglected, till modern curiosity or chance began to disclose them. The urn of Flavia Valentina, in Mr Towley's capital collection, contained seven brass coins of Antoninus Pius and Eleagabalus. Such are generally black, from being burnt with the dead. The best and freshest coins were used on these occasions from respect to the dead; and hence their fine conservation. At Syracuse a skeleton was found in a tomb, with a beautiful gold coin in its mouth; and innumerable other instances might be given, for hardly is a funeral urn found without coins. Other incidents also conspire to furnish us with numbers of ancient coins, though the above-recited circumstance be the chief cause of perfect conservation. In Sicily, the silver coins with the head of Proserpine were found in such numbers as to weigh 600 French livres or pounds. In the 16th century, 60,000 Roman coins were found at Modena, thought to be a military chest hid after the battle of Bedriacum, when Otho was defeated by Vitellius. Near Brest, in the year 1760, between 20 and 30,000 Roman coins were found. A treasure of gold coins of Lyfimachus was found at Deva on the Marus; and Strabo, lib. vii. and Pausanias in Attica, tell that he was defeated by the Getæ; at which time this treasure seems to have fallen into their hands."

79
Number of ancient coins.

Thus Mr Pinkerton, from the authority of Mr Hancarville and others: but considering these vast numbers of coins found in various places, it seems sur-

prising how so few should now remain in the cabinets of the curious, as the same author informs us that the whole of the different ancient coins known to us amount only to about 80,000, though he owns that the calculation cannot be esteemed accurate.

How to distinguish true from counterfeits.

Sect. VII. *How to distinguish true Medals from counterfeits.*

THE most difficult and the most important thing in the whole science of medals is the method of distinguishing the true from the counterfeit. The value put upon ancient coins made the forgery of them almost coeval with the science itself; and as no laws inflict a punishment upon such forgers, men of great genius and abilities have undertaken the trade: but whether to the real detriment of the science or not, is a matter of some doubt; for if only exact copies of genuine medals are sold for the originals, the imposition may be deemed trifling: but the case must be accounted very different, if people take it upon them to forge medals which never existed. At first the forgeries were extremely gross; and medals were forged of Priam, of Aristotle, Artemisia, Hannibal, and most of the other illustrious personages of antiquity. Most of these were done in such a manner, that the fraud could easily be discovered; but others have imposed even upon very learned men. Mr Pinkerton mentions a remarkable medal of the emperor Heraclius, representing him in a chariot on the reverse, with Greek and Latin inscriptions, which Joseph Scaliger and Lipsius imagined to have been struck in his own time, but which was certainly issued in Italy in the 15th century. "Other learned men (says our author) have been strangely misled, when speaking of coins; for to be learned in one subject excludes not gross ignorance in others. Budæus, de Asse, quotes a denarius of Cicero, M. TULL. Erasmus, in one of his Epistles, tells us with great gravity, that the gold coin of Brutus, struck in Thrace, ΚΟΣΩΝ, bears the patriarch Noah coming out of the ark with his two sons, and takes the Roman eagle for the dove with the olive branch. Winkelman, in his letters, informs us, that the small brass piece with Virgil's head, reverse EPO, is undoubtedly ancient Roman; and adds, that no knowledge of coins can be had out of Rome: but Winkelman, so conversant in statues, knew nothing of coins. It is from other artists and other productions that any danger of deceit arises. And there is no wonder that even the skilful are misled by such artists as have used this trade; for among them appear the names of Victor Gambello, Giovanni del Cavino, called the PADUAN, and his son Alessandro Bassiano, likewise of Padua; Benvenuto Cellini, Alessandro Greco, Leo Aretino, Jacobo da Frezzo, Federigo Bonzagna, and Giovanni Jacopo, his brother; Sebastiano Plumbo, Valerio de Vicenza, Gorlaeus a German, Carteron of Holland, and others, all or most of them of the 16th century; and Cavino the Paduan, who is the most famous, lived in the middle of that century. The forgeries of Cavino are held in no little esteem, being of wonderful execution. His and those of Carteron are the most numerous, many of the other artists here mentioned not having forged above two or three coins. Later forgers were

80
Coins forged by excellent artists.

How to distinguish true from counterfeits.

were Dervieu of Florence who confined himself to medallions, and Cogornier who gave coins of the 30 tyrants in small brads. The chief part of the forgeries of Greek medals which have come to my knowledge are of the first mentioned, and a very gross kind, representing persons who could never appear upon coin, such as Priam, Æneas, Plato, Alcibiades, Artemisia, and others. The real Greek coins were very little known or valued till the works of Goltzius appeared, which were happily posterior to the æra of the grand forgers. Why later forgers have seldom thought of counterfeiting them cannot easily be accounted for, if it is not owing to the masterly workmanship of the originals, which sets all imitation at defiance. Forgeries, however, of most ancient coins may be met with, and of the Greek among the rest.

81
Roman forgeries more conspicuous than Greek ones.

"The forgeries are more conspicuous among the Roman medals than any other kind of coins; but we are not to look upon all these as the work of modern artists. On the contrary, we are assured that many of them were fabricated in the times of the Romans themselves, some of them being even held in more estimation than the genuine coins themselves, on account of their being plated, and otherwise executed in a manner to which modern forgers could never attain. Even the ancients held some of these counterfeits in such estimation, that Pliny informs us there were frequently many true denarii given for one false one."—Caracalla is said to have coined money of copper and lead plated with silver; and plated coins, the work of ancient forgers, occur of many Greek cities and princes; nay, there are even forgeries of barbaric coins. "Some Roman coins (says Mr Pinkerton) are found of iron or lead plated with brads, perhaps trials of the skill of the forger. Iron is the most common; but one decursio of Nero is known of lead plated with copper. Neumann justly observes, that no historic faith can be put in plated coins, and that most faulty reverses, &c. arise from plated coins not being noticed as such. Even of the Roman consular coins

82
Denarius of Brutus.

not very many have ever been forged. The celebrated silver denarius of Brutus, with the cap of liberty and two daggers, is the chief instance of a consular coin of which a counterfeit is known. But it is easily rejected by this mark: in the true coin the cap of liberty is below the guard or hilt of the daggers; in the false, the top of it rises above that hilt."

83
Imperial medals.

The imperial series of medals is the grand object of modern medallic forgeries; and the deception was at first extended to the most eminent writers upon the subject. The counterfeits are by Mr Pinkerton divided into six classes:

I. Such as are known to be imitations, but valued on account of the artists by which they are executed. In this class the medals of the Paduan rank highest; the others being so numerous, that a complete series of imperial medals of almost every kind, nay almost of every medallion, may be formed from among them. In France, particularly, by far the greater part of the cabinets are filled with counterfeits of this kind. They are distinguished from such as are genuine by the following marks: 1. The counterfeits are almost universally thinner. 2. They are never worn nor damaged. 3. The letters are modern. 4. They are either destitute of varnish entirely, or have a false one, which is

easily known by its being black, shining, and greasy, and very easily hurt with the touch of a needle, while the varnish of ancient medals is as hard as the metal itself. Instead of the greasy black varnish above mentioned, indeed, they have sometimes a light green one, spotted with a kind of iron marks, and is composed of sulphur, verdigrease, and vinegar. It may frequently be distinguished by the hairstrokes of the pencil with which it was laid on being visible upon it. 5. The sides are either filed or too much smoothed by art, or bear the marks of a small hammer. 6. The counterfeits are always exactly circular, which is not the case with ancient medals, especially after the time of Trajan.

The Paduan forgeries may be distinguished from those of inferior artists by the following marks: 1. The former are seldom thinner than the ancient. 2. They very seldom appear as worn or damaged, but the others very frequently, especially in the reverse, and legend of the reverse, which sometimes, as in forged Othos, appear as half consumed by time. 3. The letters in moulds taken from the antique coins have the rudeness of antiquity. 4. False varnish is commonly light green or black, and shines too much or too little. 5. The sides of forged coins are frequently quite smooth, and undistinguishable from the ancient, though to accomplish this requires but little art. 6. Counterfeit medals are frequently as irregular in their form as the genuine; but the Paduan are generally circular, though false coins have often little pieces cut off, in perfect imitation of the genuine. 7. In cast coins the letters do not go sharp down into the metal, and have no fixed outline; their minute angles, as well as those of the drapery, are commonly filled up, and have not the sharpness of the genuine kind. Where the letters or figures are faint, the coin is greatly to be suspected.

The letters form the great criterion of medals, the ancient being very rude, but the modern otherwise; the reason of which, according to Cellini, is, that the ancients engraved all their matrices with the graver or burin, while the modern forgers strike theirs with a punch.

According to Vico, the false patina is green, black, russet, brown, grey, and iron-colour. The green is made from verdigrease, the black is the smoke of sulphur, the grey is made of chalk steeped in urine, the coin being left for some days in the mixture. The russet is next to the natural, by reason of its being a kind of froth which the fire forces from ancient coins; but when false, it shines too much. To make it they frequently took the large brads coins of the Ptolemies, which were often corroded, and made them red hot in the fire; put the coins upon them, and a fine patina adhered. Our author does not say in what manner the iron-covered patina was made. "Sometimes (adds he) they take an old defaced coin, covered with real patina, and stamp it anew; but the patina is then too bright in the cavities, and too dull in the protuberances. The trial of brads coins with the tongue is not to be despised; for if modern the patina tastes bitter or pungent, while if ancient it is quite tasteless."

Mr Pinkerton informs us, that all medallions from Julius Cæsar to Adrian are much to be suspected of forgery; the true medals of the first 14 emperors being

How to distinguish true from counterfeits.

84
Paduan forgeries how known.

85
Letters the principal criterion of medals.

86
Vico's account of false patina.

How to distinguish true from counterfeits. ing exceedingly valuable, and to be found only in the cabinets of princes.

87 Medals cast from the Paduan forgeries. II. The second class of counterfeit medals contains those cast from moulds taken from the Paduan forgeries, and others done by eminent masters. These are sometimes more difficult to be discovered than the former, because in casting them they can give any degree of thickness they please; and, filling the small sand-holes with mastic, they retouch the letters with a graver, and cover the whole with varnish. The instructions already given for the former class, however, are also useful for those of the second, with this addition, that medals of this class are generally lighter than the genuine, because fire rarefies the metal in some degree, while that which is struck is rather condensed by the strokes. In gold and silver medals there cannot be any deception of this kind; because these metals admit not of patina, and consequently the varnish betrays the imposition. The marks of the file on the margin of those of the second class are a certain sign of forgery; though these do not always indicate the forgery to be of modern date, because the Romans often filed the edges of coins to accommodate them to the purposes of ornament, as quarter guineas are sometimes put into the bottom of punch ladders. It is common to imitate the holes of medals made by time by means of aqua-fortis; but this destroys the sides of a coin more effectually than if it had been eat into naturally. The fraud, however, is not easily distinguished.

88 Medals cast from an antique. III. *Medals cast in moulds from an antique.*—In this mode some forgers, as Beauvais informs us, have been so very careful, that they would melt a common medal of the emperor whom they meant to counterfeit, lest the quality of the metal should betray them. “This (says Mr Pinkerton) has been done in the silver Septimius Severus, with the reverse of a triumphal arch, for which a common coin of the same prince has been melted; and in other instances. Putting metals in the fire or upon hot iron to cleanse them, gives them an appearance of being cast; for some spots of the metal being softer than the rest will run, which makes this one of the worst methods of cleaning medals.—The directions given for discovering the two former deceptions hold good also in this.

89 Ancient medals retouched. IV. *Ancient medals retouched and altered.*—This is a class of counterfeits more difficult to be discovered than any other. “The art (says Mr Pinkerton) exerted in this class is astonishing; and a connoisseur is the less apt to suspect it, because the coins themselves are in fact ancient. The acute minds of the Italian artists exerted themselves in this way, when the other forgeries became common and known. With graving tools they alter the portraits, the reverses, and the inscriptions themselves, in a surprising manner. Of a Claudius struck at Antioch they make an Otho; of a Faustina, a Titiana; of a Julia Severa, a Didia Clara; of a Macrinus, a Pescennius, &c. Give them a Marcus Aurelius, he starts up a Pertinax, by thickening the beard a little, and enlarging the nose. In short, wherever there is the least resemblance in persons, reverses, or legends, an artist may from a trivial medal generate a most scarce and valuable one. This fraud is distinguishable by the false varnish which sometimes masks it; but, above all, by the letters of the

legend, which are always altered. Though this be sometimes done with an artifice almost miraculous, yet most commonly the characters straggle, are disunited, and not in a line.”

In counterfeits of this kind sometimes the obverse is not touched, but the reverse made hollow, and filled with mastic coloured like the coin, and engraven with such device and legend as was most likely to bring a great price; others are only retouched in some minute parts, by which, however, the value of the coin is much diminished. “Against all these arts (says Mr Pinkerton), severe scrutiny must be made by the purchaser upon the medal itself; and the investigation and opinion of eminent antiquaries had upon its being altered, or genuine as it is issued from the mint.

90 Medals with new devices, or foldered. V. *Medals impressed with new devices, or foldered.*—In the first article of this class the reverses have been totally filed off, and new ones impressed with a dye and hammer. This is done by putting the face or obverse, whichever is not touched, upon different folds of pasteboard, afterwards applying the dye and striking it with a hammer. The forgery in this class is very easily discovered, as the devices and inscriptions on the counterfeits are known not to exist on true medals: as the Pons Ælius on the reverse of Adrian; the *Expositio Judaica* of the same emperor, &c. The difference of fabrication in the face or reverse will be discovered at the first glance by any person of skill.

The foldered medals consist of two halves belonging to different medals, sawed through the middle and then joined with folder. This mode of counterfeiting is common in silver and brass coins. “They will take an Antoninus, for example, and saw off the reverse, then folder to the obverse which they have treated in the same manner. This makes a medal, which, from an unknowing purchaser, will bring an hundred times the price of the two coins which compose it. When the deceit is used in brass coins, they take care that the metals be of one hue; though indeed some pretenders in this way sometimes folder copper and brass together, which at once reveals the deceit. Medals which have a portrait on each side, and which are generally valuable, are the most liable to a suspicion of this fraud. To a very nice eye the minute ring of folder is always visible; and upon inserting a graver, the fabrication falls into halves.”

In the same manner reverses are sometimes foldered to faces not originally belonging to them; as one mentioned by Pere Jobert of Domitian with an amphitheatre, a reverse of Titus joined to it. Another art is sometimes made use of in this kind of counterfeits, of which there is an instance of the temple of Janus upon Nero's medals; where the middle brass is taken off, and inserted in a cavity made in the middle of a large coin of that prince. In the coins of the lower empire, however, the reverses of medals are sometimes so connected with their obverses, that a suspicion of forgery sometimes occurs without any foundation. They are met with most commonly after the time of Gallienus, when such a number of usurpers arose, that it was difficult to obtain an exact portrait of their features; the coiners had not time, therefore, to strike a medal for these as they could have done for other emperors who reigned longer. Hence, on the reverse of

How to distinguish true from counterfeits.

Medals with new devices, or foldered.

How to distinguish true from counterfeits.

91
Plated medals, &c.

of a medal of Marius, who reigned only three days, there is PACATOR ORBIS, which shows that at that time they had reverses ready fabricated, to be applied as occasion might require.

VI. *Plated medals, or those which have clefts.*—It has been already remarked, that many true medals are cracked in the edges; owing to the repeated strokes of the hammer, and the little degree of ductility which the metal possesses. This the forgers attempt to imitate by a file; but it is easy to distinguish betwixt the natural and artificial cleft by means of a small needle. The natural cleft is wide at the extremity, and appears to have a kind of almost imperceptible filaments; the edges of the crack corresponding with each other in a manner which no art can imitate.

The plated medals which have been forged in ancient times were long supposed to be capable of resisting every effort of modern imitation; but of late years, "some ingenious rogues (says Mr Pinkerton) thought of piercing false medals of silver with a red hot needle, which gave a blackness to the inside of the coin, and made it appear plated to an injudicious eye. This fraud is easily distinguished by scraping the inside of the metal." It is, however, very difficult to distinguish the forgeries of rude money when not cast; and our author gives no other direction than to consult a skilful medallist. Indeed, notwithstanding all the directions already given, this seems to be a resource which cannot by any means with safety be neglected.

92
Mr Pinkerton's directions for knowing medals.

A real and practical knowledge of coins "is only to be acquired (says he) by seeing a great number, and comparing the forged with the genuine. It cannot therefore be too much recommended to the young connoisseur, who wishes to acquire some knowledge in this way, to visit all the sales and cabinets he can, and to look upon all ancient medals with a very microscopic eye. By these means only is to be acquired that ready knowledge which enables at first glance to pronounce upon a forgery, however ingenious. Nor let the science of medals be from this concluded to be uncertain; for no knowledge is more certain and immediate, when it is properly studied by examination of the real objects. A man who buys coins, trusting merely to his theoretic perusal of medallist books, will find himself woefully mistaken. He ought to study coins first, where only they can be studied, in themselves. Nor can it be matter of wonder or implication of caprice, that a medallist of skill should at one perception pronounce upon the veracity or falsehood of a medal; for the powers of the human eye, employed in certain lines of science, are amazing. Hence a student can distinguish a book among a thousand similar, and quite alike to every other eye: hence a shepherd can discern, &c.: hence the medallist can say in an instant, 'this is a true coin, and this is a false,' though to other people no distinction be perceptible."

93
Forgeries of modern coins.

Forgeries of modern coins and medals, Mr Pinkerton observes, are almost as numerous as of the ancient. The satyric coin of Louis XII. PERDAM BABYLONIS NOMEN, is a remarkable instance: the false coin is larger than the true, and bears date 1512. The rude coins of the middle ages are very easily forged, and forgeries have accordingly become common. Forged coins of Alfred and other early princes of England have appeared, some of which have been done with great art.

"The two noted English pennies of Rich. I. says our author, are of this stamp; and yet have imposed upon Messrs Folkes and Snelling, who have published them as genuine in the two best books upon English coins. But they were fabricated by the late Mr White of Newgate-street, a noted collector, who contaminated an otherwise fair character by such practices. Such forgeries, though easy, require a skill in the history and coinage of the times which luckily can hardly fall to the lot of a common Jew or mechanic forger. But the practice is detestable, were no gain proposed: and they who stoop to it must suppose, that to embarrass the path of any science with forgery and futility, implies no infamy. In forgeries of ancient coin, the fiction is perhaps sufficiently atoned for by the vast skill required; and the artist may plausibly allege, that his attention was not to deceive, but to excite his utmost powers, by an attempt to rival the ancient masters. But no possible apology can be made for forging the rude money of more modern times. The crime is certainly greater than that which leads the common coiner to the gallows; inasmuch as it is committed with more ease, and the profit is incomparably larger."

Value.

SECT. VIII. *Of the Value of Medals.*

ALL ancient coins and medals, though equally genuine, are not equally valuable. In medals, as well as in every thing else, the scarcity of a coin stamps a value upon it which cannot otherwise be derived from its intrinsic worth. There are four or five degrees of rarity reckoned up; the highest of which is called *unique*. The cause is generally ascribed to the fewness of number thrown off originally, or to their having been called in, and recoinced in another form. To the former cause Mr Pinkerton ascribes the scarcity of the copper of Otho and the gold of Pescennius Niger; to the latter that of the coinage of Caligula: "though this last (says he) is not of singular rarity; which shows that even the power of the Roman senate could not annihilate an established money; and that the first cause of rarity, arising from the small quantity originally struck, ought to be regarded as the principal."

In the ancient cities Mr Pinkerton ascribes the scarcity of coin to the poverty or smallness of the state; but the scarcity of ancient regal and imperial coins arises principally from the shortness of the reign; and sometimes from the superabundance of money before, which rendered it almost unnecessary to coin any money during the reign of the prince. An example of this we have in the scarcity of the shillings of George III. which shows that shortness of reign does not always occasion a scarcity of coin; and thus the coins of Harold II. who did not reign a year, are very numerous, while those of Richard I. who reigned ten, are almost unique.

94
Causes of the scarcity of medals in ancient cities.

Sometimes the rarest coins lose their value, and become common. This our author ascribes to the high price given for them, which tempts the possessors to bring them to market; but chiefly to the discovering of hoards of them. The former cause took place with Queen Anne's farthings, some of which formerly sold at five guineas; nay, if we could believe the newspapers,

Value.
[94]
Rare coins
sometimes
become
common,
and vice
versa.

95
Silver coins
in what
cases most
esteemed.

pers, one of them was some years ago sold for 960l. the latter with the coins of Canute, the Danish king of England; which were very rare till a hoard of them was discovered in the Orkneys. As discoveries of this kind, however, produce a temporary plenty, so when they are dispersed the former scarcity returns; while on the other hand some of the common coins become rare through the mere circumstance of neglect.

As double the number of copper-coins of Greek cities are to be met with that there are of silver, the latter are of consequence much more esteemed: but the reverse is the case with those of the Greek princes. All the Greek civic coins of silver are very rare excepting those of Athens, Corinth, Messina, Dyrhachium, Massilia, Syracuse, and some others. Of the Greek monarchic coins, the most rare are the tetradrachms of the kings of Syria, the Ptolemies, the sovereigns of Macedon and Bithynia, excepting those of Alexander the Great and Lyfimachus. Those of the kings of Cappadocia are of a small size, and scarce to be met with. Of those of Numidia and Mauritania, the coins of Juba the father are common; but those of the son and nephew Ptolemy scarce. Coins of the kings of Sicily, Parthia, and Judæa, are rare; the last very much so. We meet with no coins of the kings of Arabia and Comagene except in brass: those of the kings of Bosphorus are in electrum, and a few in brass, but all of them rare; as are likewise those of Phileteneis king of Pergamus and of the kings of Pontus. In the year 1777, a coin of Mithridates sold for L.26, 5s. Didrachms of all kings and cities are scarce excepting those of Corinth and her colonies; but the gold coins of Philip of Macedon, Alexander the Great, and Lyfimachus, as has already been observed, are common. The silver tetradrachms of all kings bear a very high price. The didrachm of Alexander the Great is one of the scarcest of the smaller Greek silver coins; some of the other princes are not uncommon.

96
Greek copper coins.

In most cases the copper money of the Greek monarchs is scarce; but that of Hiero I. of Syracuse is uncommonly plenty, as well as that of several of the Ptolemies.

97
Roman consular coins.

The most rare of the consular Roman coins are those restored by Trajan: of the others the gold consular coins are the most rare, and the silver the most common; excepting the coin of Brutus with the cap of Liberty already mentioned, with some others. Some of the Roman imperial coins are very scarce, particularly those of Otho in brass; nor indeed does he occur at all on any coin struck at Rome: but the reason of this may with great probability be supposed to have been the shortness of his reign. His portrait upon the brass coins of Egypt and Antioch is very bad; as well as almost all the other imperial coins of Greek cities. The best likeness is on his gold and silver coins; the latter of which are very common. The Greek and Egyptian coins are all of small or middling sizes, and have reverses of various kinds: those of Antioch have Latin legends, as well as most of the other imperial coins of Antioch. They have no other reverse but the SC in a wreath; excepting in one instance or two of the large and middle brass, where the inscriptions are in Greek. Latin coins of Otho in brass,

VOL. XI. Part I.

with figures on the reverse, are certainly false; though in the cabinet of D'Ennery at Paris there was an Otho in middle brass restored by Titus, which was esteemed genuine by connoisseurs.

The leaden coins of Rome are very scarce: Most of them are pieces struck or cast on occasion of the saturnalia; others are tickets for festivals and exhibitions, both private and public. The common tickets for theatres were made of lead, as were the *contorniali*; perpetual tickets, like the English silver tickets for the opera. Leaden medallions are also found below the foundations of pillars and other public buildings, in order to perpetuate the memory of the founders. From the time of Augustus also we find that leaden seals were used. The work of Tignorini upon this subject, intitled *Piombi Antiocchi*, is much recommended by Mr Pinkerton.

The Roman coins, which have been blundered in the manner formerly mentioned, are very rare, and undeservedly valued by the connoisseurs. The blunders in the legends of these coins, which in all probability are the mere effects of accident, have been so far mistaken by some medallists, that they have given rise to imaginary emperors who never existed. A coin of Faustina, which has on the reverse *SOUSTI. S. C.* puzzled all the German antiquaries, till at last Klotz gave it the following facetious interpretation: *Sine omni utilitate seßamini tantas ineptias.*

The heptarchic coins of England are generally rare except those called *flycas*, which are very common, as well as those of Burgred king of Mercia. The coins of Alfred which bear his bust are scarce, and his other money much more so. Those of Hardyknute are so rare, that it was even denied that they had an existence; but Mr Pinkerton informs us, that there are three in the British museum, upon all of which the name *HARTHKANUT* is quite legible. No English coins of King John are to be met with, tho' there are some Irish ones; and only French coins of Richard I. "Leake (says Mr Pinkerton) made a strange blunder in ascribing coins of different kings with two faces, and otherwise spoiled in the stamping, to this prince; in which, as usual, he has been followed by a misled number."

Coins of Alexander II. of Scotland are rather scarce, but those of Alexander III. are more plentiful. Those of John Baliol are rare, and none of Edward Baliol to be found.

SECT. IX. Of the Purchase of Medals.

MEDALS are to be had at the shops of goldsmiths and silversmiths, with those who deal in curiosities, &c. but in great cities there are professed dealers in them. The best method of purchasing medals; however, is that of buying whole cabinets, which are every year exposed to auction at London. In these the rare medals are sold by themselves; but the common ones are put up in large lots, so that the dealers commonly purchase them. Mr Pinkerton thinks it would be better that medals were sold one by one; because a lot is often valued and purchased for the sake of a single coin; while the others separately would sell for perhaps four times the price of the whole lot. "If any man of common sense and honesty (says Mr Pinkerton)

D

kerton)

Value.

98

Leaden Roman coins.

99

Of coins blundered in the mint-age.

100

Heptarchic coins of England.

101

Scottish coins.

Purchase. kerton) were to take up the trade of selling coins in London, he would make a fortune in a short time. This profitable business is now in the hands of one or two dealers, who ruin their own interest by making an elegant study a trade of knavery and imposition. If they buy 300 coins for 10s. they will ask 3s. for one of the worst of them! nay, sell forged coins as true to the ignorant. The simpletons complain of want of business. A knave is always a fool."

102
Price of
gold coins
of Car-
thage, &c.

The gold coins of Carthage, Cyrene, and Syracuse, are worth about twice their intrinsic value as metal; but the other gold civic coins from 5l. to 30l. each. The only gold coins of Athens certainly known to exist are two lately procured by the king. One of these remains in possession of his majesty, but the other was given by the queen to Dr Hunter. There was another in the British museum, but suspected not to be genuine. Dr Hunter's coin, then, if sold, would bear the highest price that could be expected for a coin.

103
Of silver
coins.

The silver coins of Syracuse, Dyrrhachium, Massilia, Athens, and a few other states, are common; the drachmas and coins of lesser size are worth about five shillings; the didrachms, tetradrachms, &c. from five to ten, according to their size and beauty; the largest, as might naturally be expected, being more valuable than the small ones. The tetradrachms, when of cities whose coins are common, are worth from 7s. 6d. to 1l. 1s. but it is impossible to put a value upon the rare civic coins; ten guineas have been given for a single one.

104
Greek cop-
per coins.

The Greek copper coins are common, and are almost all of that kind called *small brads*; the middle size being scarce, and the largest in the ages prior to the Roman emperors extremely so. The common Greek coins of brads bring from 3d. to 18d. according to their preservation; but when of cities, whose coins are rare, much higher prices are given. "The want of a few cities, however (says Mr Pinkerton), is not thought to injure a collection; as indeed new names are discovered every dozen of years, so that no assortment can be perfect. To this it is owing that the rarity of the Grecian civic coins is not much attended to."

105
Gold coins
of Philip
and Alexan-
der.

The gold coins of Philip and Alexander the Great being very common, bear but from five to ten shillings above their intrinsic value; but those of the other princes, being rare, sell from 3l. to 30l. each, or even more.

106
Greek cop-
per coins
more rare
than the
silver.

The tetradrachms are the dearest of the silver monarchic money, selling from five to ten shillings; and if very rare, from 3l. to 30l. Half these prices may be obtained for the drachmas, and the other denominations in proportion.

The Greek copper coins are for the most part scarcer than the silver, except the Syro-Grecian, which are common, and almost all of the size called small brads. "They ought (says Mr Pinkerton) to bear a high price; but the metal and similarity to the copper civic coins, which are common, keep their actual purchase moderate, if the seller is not well instructed, and the buyer able and willing to pay the price of rarity."

The name of weights given to the ancient Roman ascs is, according to our author, exceedingly improper; as that people had weights of lead and brass

fides, without the least appearance of a portrait upon them. These denote the weight by a certain number of knobs; and have likewise small *fleurettes* engraved upon them. According to Mr Pinkerton, whenever we meet with a piece of metal stamped on both sides with busts and figures, we may lay it down as a certain rule that it is a coin; but when slightly ornamented and marked upon one side only, we may with equal certainty conclude it to be a weight.

107
Price of the
ancient Ro-
man ascs.
The ancient Roman ascs are worth from 2s. to 2l. according to the singularity of their devices. Consular gold coins are worth from 1l. to 5l. Pompey with his sons 21l. and the two Bruti 25l. The silver coins are universally worth from a shilling to half a crown, excepting that of the cap of Liberty and a few others, which if genuine will bring from 10s. to 5l. The consular copper bears an equal price with the silver, but is more rare; the consular silver coins restored by Trajan are worth 20s. each.

With regard to the Roman imperial coins, it is to be observed, that some of those which belong to princes whose coins are numerous, may yet be rendered extremely valuable by uncommon reverses. Mr Pinkerton particularly points out that of Augustus, with the legend C. MARIUS TROGVs, which is worth three guineas, though the silver coins of that prince in general are not worth above a shilling. In like manner, the common gold coins of Trajan are not worth above twenty shillings, while those with *Basilica Ulpia, Forum Trajani, Divi Nerva et Trajanus, Pater, Divi Nerva et Platina Aug. Profectio Aug. Regna Assignata, Rex Parthus*, and some others, bear from three to six pounds. The ticket medals belong to the Roman Senate, and are worth from three to ten shillings. The forged coins and medallions of the Paduan sell from one to three shillings each.

108
Barbaric
coins.
Of the coins of other nations, those of Hilderic king of the Vandals are in silver, and worth 10s.; the small brads of Athanaric, 5s.; the gold of Theodoric 2l.; the second brads of Theodahat 5s.; the second brads of Baducta rare, and worth 10s.; the third brads, 3s. The British coins are very rare, and worth from ten shillings to two guineas each, sometimes much more. Medals with unknown characters are always scarce and dear. Saxon pennies of the heptarchy are rare, and worth from ten shillings to ten pounds, according to their scarcity and preservation. The coins of the English kings are common; those of Edward the Confessor, in particular; others are rare, and worth from ten shillings to two guineas, while two of Hardyknute are worth no less than ten guineas. The gold medals of Henry, in 1545, and the coronation of Edward, are worth 20l. each: the Mary of Trezzo, 3l.; Simon's head of Thurloe in gold is worth 12l.; his oval medal in gold upon Blake's naval victory at sea is worth 30l.; and his trial piece, if brought to a sale, would, in Mr Pinkerton's opinion, bring a still higher price. The medals of Queen Anne, which are intrinsically worth about two guineas and a half, sell for about 3l. each; the silver, of the size of a crown piece, sell for 10s. and the copper from five to ten shillings. Daffier's copper pieces sell from two to five shillings, and a few bear a higher price.

The Scottish gold coins sell higher than the English,

Arrange-
ment, &c.

109
Gold coins
of Scotland

110
English
coins struck
in Ireland.

lish, but the others are on a par. The shilling of Mary with the bust is rare, and sells for no less than 30 l.; the half 3 l.; and the royal 5 l. 5 s. The French testoon of Francis and Mary brings 10 l. 10 s. and the Scottish one of Mary and Henry would bring 50 l. as would also the medal of James IV. The coronation medal of Francis and Mary is worth 20 l. Briot's coronation medal sold in 1755 only for two guineas at Dr Mead's sale; but would now bring 20 l. if sold according to rarity.

The English coins struck in Ireland are of much the same price with those of the native country; but the St Patrick's halfpence and farthings are rather scarce, and the rare crown of white metal is worth 4 l. The gun-money of James II. and all other Irish coins are very common.

Se^t. X. *Arrangement of Medals, with the Instruction to be derived from them.*

HAVING thus given a full account of every thing in general relative to medals, we must now come to some particulars respecting their arrangement, and the entertainment which a medallist may expect from the trouble and expence he is at in making a collection.

It has already been observed, that one of the principal uses of medals is the elucidation of ancient history. Hence the arrangement of his medals is the first thing that must occur in the formation of a cabinet. The most ancient medals with which we are acquainted are those of Alexander I. of Macedon, who began to reign about 501 years before Christ. The series ought of consequence to begin with him, and to be succeeded by the medals of Sicily, Caria, Cyprus, Heraclia, and Pontus. Then follow Egypt, Syria, the Cimmerian Bosphorus, Thrace, Bithynia, Parthia, Armenia, Damascus, Cappadocia, Paphlagonia, Pergamus, Galatia, Cilicia, Sparta, Pæonia, Epirus, Illyricum, Gaul, and the Alps, including the space of time from Alexander the Great to the birth of Christ, and which is to be accounted the third medallic series of ancient monarchs. The last series goes down to the fourth century, including some of the monarchs of Thrace, Bosphorus, and Parthia, with those of Comagene, Edessa or Osrhoene, Mauritania, and Judæa. A most distinct series is formed by the Roman emperors, from Julius Cæsar to the destruction of Rome by the Goths; nay for a much longer period, were it not that towards the latter part of it the coins become so barbarous as to destroy the beauty of the collection. Many series may be formed of modern potentates.

By means of medals we can with great certainty determine the various ornaments worn by ancient princes as badges of distinction. The Grecian kings have generally the diadem, without any other ornament; and though in general the side of the face is presented to view, yet in some very ancient Greek and Roman consular coins, full faces of excellent workmanship are met with. On several coins also two or three faces are to be seen, and these are always accounted very valuable.

The diadem, which was no more than a ribbon tied round the head with a floating knot behind, adorns all the Grecian princes from first to last, and is almost

an infallible mark of sovereign power. In the Roman consular coins it is seen in conjunction with Numa and Ancus, but never afterwards till the time of Licinius, the colleague of Constantine. Dioclesian, indeed, according to Mr Gibbon, first wore the diadem, but his portrait upon coins is never adorned with it. So great an aversion had the Romans to kingly power, that they rather allowed their emperors to assume the radiated crown, the symbol of divinity, than to wear a diadem; but after the time of Constantine it becomes common. The radiated crown appears first on the posthumous coins of Augustus as a mark of deification, but in somewhat more than a century became common.

The laurel crown, at first a badge of conquest, was afterwards permitted by the senate to be worn by Julius Cæsar, in order to hide the baldness of his head. From him all the emperors appear with it on their medals, even to our own times. In the lower empire the crown is sometimes held by a hand above the head, as a mark of piety. Besides these, the naval, mural, and civic crowns, appear on the medals both of emperors and other eminent men, to denote their great actions. The laurel crown is also sometimes worn by the Greek princes. The Arsacidæ of Parthia wear a kind of fash round the head, with their hair in rows of curls like a wig. The Armenian kings have the *tiara*, a kind of cap which was esteemed the badge of imperial power in the east. Conical caps are seen on the medals of Xerxes, a petty prince of Armenia, and Juba the father, the former having a diadem around it.

The impious vanity of Alexander and his successors in assuming divine honours is manifest on their medals, where various symbols of divinity are met with. Some of them have an horn behind their ear, either to denote their strength, or that they were the successors of Alexander, to whom this badge might be applied as the son of Jupiter Ammon. This, however, Mr Pinkerton observes, is the only one of these symbols which certainly denotes an earthly sovereign, it being doubted whether the rest are not all figures of gods.—According to Eckhet, even the horn and diadem belong to Bacchus, who invented the latter to cure his headaches; and, according to the same author, the only monarch who appears on coins with the horn is Lyfimachus. We are informed, however, by Plutarch, that Pyrrhus had a crest of goats horns to his helmet; and the goat we know was a symbol of Macedon. Perhaps the successors of Alexander wore this badge of the horn in consequence. The helmet likewise frequently appears on the heads of sovereigns, and Constantine I. has helmets of various forms curiously ornamented.

The diadem is worn by most of the Greek queens, by Orodatis, daughter of Lycomedes, king of Bithynia; and though the Roman empresses never appear with it, yet this is more than compensated by the variety of their head-dresses. Sometimes the bust of an empress is supported by a crescent, to imply that she was the moon as her husband was the sun of the state. The toga, or veil drawn over the face, at first implied that the person was invested with the pontifical office; and accordingly we find it on the busts of Julius Cæsar, while Pontifex Maximus. It likewise implies the augurship,

Arrange-
ment, &c.

112
Symbols of
divinity on
the coins of
Alexander
and his suc-
cessors.

111
Diadem an
ancient em-
blem of
sovereign
authority.

Arrangement, &c.

Arrangement, &c.

gurs, the augurs having a particular kind of gown called *lana*, with which they covered their heads when observing an omen. In latter times this implies only consecration, and is common in coins of empresses. It is first met with on the coins of Claudius Gothicus as the mark of consecration of an emperor. The *nimbus*, or glory, now appropriated to saints, has been already mentioned. It is as ancient as Augustus, but is not to be met with on many of the imperial medals, even after it began to be appropriated to them. There is a curious coin, which has upon the reverse of the common piece with the head of Rome *URBS ROMA*, in large brass, Constantine I. sitting amid victories and genii, with a triple crown upon his head for Europe, Asia, and Africa, with the legend *SECURITAS ROMÆ*.

113
Portraits
upon medals.

In general only the bust is given upon medals, though sometimes half the body or more; in which latter case the hands often appear with ensigns of majesty in them; such as the globe said to have been introduced by Augustus as a symbol of universal dominion; the sceptre sometimes confounded with the consular staff, a roll of parchment, the symbol of legislative power, and an handkerchief expressive of the power over the public games, where the emperor gave the signal. Some princes hold a thunderbolt, showing that their power on earth was equal to that of Jupiter in Heaven; while others hold an image of Victory.

Medals likewise afford a good number of portraits of illustrious men; but they cannot easily be arranged in chronological order, so that a series of them is not to be expected. It is likewise vain to attempt the formation of a series of gods and goddesses to be found on ancient coins. Mr Pinkerton thinks it much better to arrange them under the several cities or kings whose names they bear. A collection of the portraits of illustrious men may likewise be formed from medals of modern date.

114
Reverses of
Greek and
Roman
coins.

The reverses of ancient Greek and Roman coins afford an infinite variety of instruction and amusement. They contain figures of deities at full length, with their attributes and symbols, public symbols and diversions, plants, animals, &c. &c. and in short almost every object of nature or art. Some have the portrait of the queen, son, or daughter of the prince whose image appears on the face or obverse; and these are esteemed highly by antiquaries, not only because every coin stamped with portraits on both sides is accounted valuable, but because they render it certain that the person represented on the reverse was the wife, son, or daughter of him who appears on the obverse; by which means they assist greatly in the adjusting of a series. Some, however, with two portraits are common, as Augustus, the reverse of Caligula; and Marcus Aurelius, reverse of Antoninus Pius.

We find more art and design in the reverses of the Roman medals than of the Greek: but, on the other hand, the latter have more exquisite relief and workmanship. The very ancient coins have no reverses, excepting a rude mark struck into the metal resembling that of an instrument with four blunt points on which the coin was struck; and was owing to its having been fixed by such an instrument on that side to receive the impression upon the other. To this succeeds the image of a dolphin, or some small animal,

in one of the departments of the rude mark, or in an hollow square: and this again is succeeded by a more perfect image, without any mark of the hollow square. Some of the Greek coins are hollow in the reverse, as those of Caulonia, Crotona, Metapontum, and some other ancient cities of Magna Grecia. About 500 B. C. perfect reverses appear on the Greek coins, of exquisite relief and workmanship. "The very muscles of men and animals (says Mr Pinkerton) are seen, and will bear inspection with the largest magnifier as ancient gems. The ancients certainly had not eyes different from ours; and it is clear that they must have magnified objects. A drop of water forms a microscope; and it is probable this was the only one of the ancients. To Greek artists we are indebted for the beauty of the Roman imperial coins; and these are so highly finished, that on some reverses, as that of Nero's decurion, the *adventus* and *progressio* of various emperors, the *fundatrix pacis* of Severus, the features of the emperor, riding or walking, are as exact as on the obverse. But though the best Greek artists were called to Rome, yet the Greek coins under the Roman emperors are sometimes well executed, and always full of variety and curiosity. No Roman or Etruscan coins have been found of the globular form, or indented on the reverse like the early Greek. The first Greek are small pieces of silver, while the Roman are large masses of copper. The former are struck; the latter cast in moulds. The reverses of the Roman coins are very uniform, the prow of a ship, a car, or the like, till about the year 100 B. C. when various reverses appear on their consular coins in all metals. The variety and beauty of the Roman imperial reverses are well known. The medallist much values those which have a number of figures; as the *Puella Faustinae*, of Faustina, a gold coin no larger than a sixpence, which has 12 figures; that of Trajan, *regna assignata*, has four; the *congiarium* of Nerva five; the allocation of Trajan seven; of Hadrian 10; of Probus 12. Some Roman medals have small figures on both sides, as the *Apolloni sancto* of Julian II. Such have not received any peculiar name among the medallists. Others have only a reverse, as the noted *spintriatu*, which have numerals I. II. &c. on the obverse."

The names of the deities represented on the reverses of Greek coins are never expressed; perhaps, as Mr Pinkerton supposes, out of piety, a symbolical representation of their attributes being all that they thought proper to delineate; but the Roman coins always express the name, frequently with an adjunct, as *VENERI VICTRICI*, &c. In others, the name of the emperor or empress is added; as *PUDICITIÆ AUGUSTÆ*, round an image of Modesty; *VIRTUS AUGUSTI*, a legend for an image of Virtue.

The principal symbols of the divine attributes to be met with on the Greek medals are as follow:

1. Jupiter is known on the coins of Alexander the Great by his eagle and thunderbolts; but when the figure occurs only on the obverses of coins, he is distinguished by a laurel crown, and placid bearded countenance. Jupiter Ammon is known by the ram's horn twisting round his ear; a symbol of power and strength, assumed by some of the successors of Alexander the Great, particularly by Lyfimachus.

2 Nep-

Arrange-
ment, &c.

Arrange-
ment, &c.

2. Neptune is known by his trident, dolphin, or being drawn by sea-horses; but he is seldom met with on the Grecian coins.

3. Apollo is distinguished by an harp, branch of laurel, or tripod; and sometimes by a bow and arrows. In the character of the Sun, his head is surrounded with rays; but when the bust only occurs, he has a fair young face, and is crowned with laurel. He is frequent on the coins of the Syrian princes.

4. Mars is distinguished by his armour, and sometimes by a trophy on his shoulders. His head is armed with a helmet, and has a ferocious countenance.

5. Mercury is represented as a youth, with a small cap on his head, wings behind his ears and on his feet. He is known by the cap, which resembles a small hat, and the wings. He appears also with the caduceus, or wand twined with serpents, and the *mar-supium*, or purse, which he holds in his hand.

6. Æsculapius is known by his bushy beard, and his leaning on a club with a serpent twisted round it. He sometimes occurs with his wife Hygeia or Health, with their son *Telephorus* or Convalescence between them.

7. Bacchus is known by his crown of ivy or vine, his diadem and horn, with a tiger and satyrs around him.

8. The figure of Hercules is common on the coins of Alexander the Great, and has frequently been mistaken for that of the prince himself. He appears sometimes as a youth and sometimes with a beard. He is known by the club, lion's skin, and remarkable apparent strength; sometimes he has a cup in his hand, and a poplar tree, as a symbol of vigour, is sometimes added to the portrait.

9. The Egyptian Serapis is known by his bushy beard, and a measure upon his head.

10. Apis is delineated in the form of a bull, with a flower of the lotos, the water-lily of the Nile, supposed by Macrobius to be a symbol of creation; and Jamblichus tells us, that Osiris was thought to have his throne in it.

11. Harpocrates, the god of Silence, appears with his finger on his mouth; sometimes with the sistrum in his left hand; a symbol common to most of the Egyptian deities.

12. Canopus, another Egyptian deity, appears in the shape of an human head placed on a kind of pitcher. "This deified pitcher (says Mr Pinkerton) seems to refer to an anecdote of ancient superstition, which, I believe, is recorded by Plutarch. It seems some Persian and Egyptian priests had a contest which of their deities had the superiority. The Egyptian said, that a single vase, sacred to Serapis, would extinguish the whole power of the Persian deity of fire. The experiment was tried; and the wily Egyptian, boring holes in the vase and stopping them with wax, afterwards filled the vase with water; which, gushing through the holes as the wax melted, extinguished the Persian deity. Hence the vase was deified."

13. The *Holy Senate* and *Holy People*, appear frequently on Greek imperial coins, sometimes represented as old men with beards, at others as youths.

The goddesses represented on medals are,

1. Juno, represented by a beautiful young woman,

sometimes with a diadem, sometimes without any badge, which is reckoned a sufficient distinction, as the other goddesses all wear badges. Sometimes she appears as the goddess of marriage; and is then veiled to the middle and sometimes to the toes. She is known by the peacock, a bird sacred to her from the fable of Argus.

2. Minerva is very common on the coins of Alexander the Great; and her bust has been mistaken by the celebrated painter Le Brun for the hero himself. She is very easily distinguished by the helmet. Her symbols are, her armour; the spear in her right hand, and the ægis, with a Medusa's head, in her left; an owl commonly standing by her.

3. Diana of Ephesus is commonly represented on the Greek imperial coins; and appears with a great number of breasts, supposed to denote universal Nature. She is supported by two deer, and carries a pannier of fruit upon her head. The bust of this goddess is known by the crescent on her brow, and sometimes by the bow and quiver at her side.

4. Venus is known by an apple, the prize of beauty, in her hand. Sometimes she is distinguished only by her total want of dress; but is always to be known by her extraordinary beauty, and is sometimes adorned with pearls about the neck.

5. Cupid is sometimes met with on the Syrian coins, and is known by his infancy and wings.

6. Cybele is known by a turreted crown and lion; or is seen in a chariot drawn by lions.

7. Ceres is known by her garland of wheat, and is common on the Sicilian coins; that island being remarkable for its fertility. Sometimes she has two serpents by her, and is sometimes drawn in a chariot by them. She carries in her hands the torches with which she is fabled to have gone in search of her daughter Proserpine.

8. Proserpine herself is sometimes met with on coins with the name of *ῥοπή* or the girl.

9. The Egyptian Isis has a bud or flower on her head; a symbol of the perpetual bloom of the inhabitants of heaven. She carries also a sistrum in her hand.

10. The Sidonian Astarte appears on a globe supported on a chariot with two wheels, and drawn by two horses.

These are the deities most commonly represented on the Greek coins. The more uncommon are, Saturn with his scythe, or with a hook on the Heraclian coins; Vulcan with his tongs, on the reverse of a coin of Thyatira, represented at work in the presence of Minerva. Adranus, a Sicilian god, is sometimes represented on coins with a dog. Anubis, an Egyptian deity, has a dog's head. Atis is known by his Phrygian bonnet; Castor and Pollux by a star on the head of each; Dis, by his old face, dishevelled hair and beard, and a hook; Flora by her crown of flowers; Nemesis by her wheel; and Pan by his horns and ears belonging to some kind of beast.

There are likewise to be found on medals many different symbols by themselves; of the most remarkable of which we shall give the following table, with their significations:

Symbols.	Signification.
1. Vases with sprigs,	Solemn games.
	2. Small

Arrangement, &c.

Symbols.

Signification.

Symbol's.

Signification.

Arrangement, &c.

2. Small chest or hamper, with a serpent leaping out,

3. Anchor on Seleucian medals,

4. Apollo on Syrian coins, on an inverted hamper.

5. Bee, - - -

6. Laurel, - - -

7. Reed, - - -

8. Ivy and grapes, - - -

9. Poppy, - - -

10. Corn, - - -

11. Owl and olive, - - -

12. Dove, - - -

13. Torch, - - -

14. Mudnis, or conic stone,

Symbols of Countries, &c.

15. Pomegranate flowers, - - -

16. Owl, - - -

17. Pegasus, - - -

18. Wolf's head, - - -

19. Bull's head, - - -

20. Minotaur's head and labyrinth,

21. Horse's head, - - -

22. Lion, - - -

23. Tortoise, - - -

24. Sphinx, - - -

25. Three legs joined, as in the Isle of Man-money,

26. Horse, - - -

27. The crescent, - - -

28. Bull, - - -

29. Ensign, with the letters COL.

30. Bull, - - -

31. Caduceus, - - -

32. Cornucopia, - - -

33. Pontifical hat, - - -

34. Parazonium, - - -

{ Mystic rites of Bacchus.

{ Coin struck at Antioch, where an anchor was dug up.

{ Covered tripod.

{ Aristeus the son of Apollo.

{ Apollo.

{ A river.

{ Bacchus.

{ Ceres and Proserpine.

{ Ceres.

{ Minerva.

{ Venus.

{ Diana, Ceres, or Proserpine.

{ The sun, Belus, or Venus.

{ Rhodes.

{ Athens.

{ Corinth.

{ Argos.

{ Bœotia.

{ Crete.

{ Pharsalia.

{ Marseilles.

{ Peloponnesus.

{ Scio.

{ Sicily.

{ Thessaly.

{ Byzantium(A).

{ Supposed to be a river.

{ A colony drawn from one legion.

{ Apis, strength or security.

{ Peace and concord.

{ Abundance.

{ Priesthood.

{ Baton of command.

35. Globe on an altar with three stars. - - -

36. Fort and gate, - - -

37. Tribuli, a kind of Chevaux de Frize, - - -

38. Altar or tripod, - - -

39. Dolphin, - - -

40. Lectisternia, - - -

41. Lituus, or twisted wand, - - -

42. Apex, or cap with strings, - - -

43. Thensa, or chariot employed to carry images, - - -

44. Peacock, - - -

45. Eagle, - - -

{ The world preserved by the gods for the three sons of Constantine I.

{ Security.

{ Unknown.

{ Piety.

{ Apollo.

{ Festivals.

{ Augurship.

{ Pontificate.

{ Consecration of an empress.

{ Ditto.

{ Consecration of an emperor.

The legends put upon medals are designed as explanations of them; but as the compass of even the largest coins does not admit of any great length of inscription, it has always been found necessary to use abbreviations; and in readily decyphering these lies a considerable part of the difficulty of the science. This, however, is greater in the Roman than in the Greek medals; for the Greeks commonly insert as much of the word as is sufficient to enable us easily to understand its meaning; but it is common for those who attempt to explain letters that do not often occur, to fall into very ridiculous errors. Of this Mr Pinkerton gives a most remarkable instance in Fortunius Licetus, a learned man, who finding upon a coin of Adrian the letters $\Gamma \Delta$, signifying the 14th year of that emperor's reign, imagined that they signified *Lucernas invenit Delta*; "Delta invented lanthorns;" and thence ascribed the origin of lanthorns to the Egyptians. Tables explaining the meaning of the abbreviations found upon medals have been published by Patin, Ursatus, and others.

SECT. XI. Of Medallions, Medalets, &c.

BESIDES the ordinary coins of the ancients, which passed in common circulation through the country, there were others of a larger size, which are now termed *medallions*. These were struck on the commencement of the reign of a new emperor and other solemn occasions: frequently also, by the Greeks in particular, as monuments of gratitude or of flattery. Sometimes they were mere trial or pattern pieces; and those abound after the time of Maximian with the words *Tres Moneta* on the reverse. The common opinion is,

(A) This appears on the early coins of Byzantium, with the legend $\text{BYZANTIN} \Sigma \Omega \Gamma$. "the preserver of Byzantium." The reason of this was, that when Philip of Macedon besieged the city, and was about to storm it in a cloudy night, the moon shone out on a sudden and discovered him; by which means the inhabitants had time to collect their forces and repulse him. The Turks, on entering Constantinople, found this badge in many places; and suspecting some magical power in it, assumed the symbol and its power to themselves; so that the crescent is now the chief Turkish ensign.

Medal-
lions, &c.

is, that all the Roman pieces of gold exceeding the denarius aureus, all in silver exceeding the denarius, and all in brass exceeding the sestertius, went under the denomination of *medallions*: but Mr Pinkerton thinks that many of these large pieces went in circulation, tho' not very commonly, as our five and two guinea pieces, silver crowns, &c. do in this country. The finest medallions were presented by the mint-masters to the emperor, and by the emperor to his friends, as specimens of fine workmanship. The best we have at present are of brass, and many of them composed of two sorts of metal; the centre being copper, with a ring of brass around it, or the contrary; and the inscription is sometimes confined to one of the metals, sometimes not. There is a remarkable difference between the Greek and Roman medallions in point of thickness; the latter being frequently three or four lines thick, while the other seldom exceed one. Very few medallions, however, were struck by the Greeks before the time of the Roman emperors; but the Greek medallions of the emperors are more numerous than those of the Romans themselves. All these pieces, however, are of such high price that few private persons are able to purchase them. In the last century Christina queen of Sweden procured about 300. In the king of France's collection there are 1200; a number formerly supposed not to exist; and Dr Hunter's collection contains about 400, exclusive of the Egyptian.

Besides these large pieces, there are smaller ones of a size somewhat larger than our half-crowns; and by Italian medallists are called *medaglioni cini*, or small medallions. They are still scarcer than the large kind.

119
Of meda-
lets.

There is still a third kind, which have almost escaped the notice of medallists, viz. the small coins or *missilia* scattered among the people on solemn occasions; such as those struck for the slaves on account of the saturnalia; counters for gaming; tickets for baths and feasts; tokens in copper and in lead; &c. These are distinguished by Mr Pinkerton by the name of *medalets*. Many, or perhaps almost all, of those struck for the saturnalia were satyrical; as the slaves had then a licence to ridicule not only their masters but any person whatever. Mr Pinkerton mentions one of the most common pieces of this kind, which has on the obverse the head of an old woman veiled, with a laurel crown; the reverse only s. c. within a wreath. Baudelot is of opinion that it is the head of Acca Laurentia, the nurse of Romulus, to whom a festival was ordained. "Perhaps (says Mr Pinkerton), it was struck in ridicule of Julius Cæsar; for the manner of the laurel crown, and its high appearance over the head, perfectly resemble that of Julius on his coins." Some have a ship upon one side; on the reverse T, or a cross, which was the image of Priapus; and occasioned many false invectives against the first Christians, who paid such respect to the cross. Some pieces have the heads of the emperors upon one side; on the reverse only numerals III. IV. V. &c. and the noted *spintriat* of Tacitus. Both these kinds appear tickets for the baths, as the number seems to denote the particular bath. Some have the head of a girl, with a vessel used at the baths in her hand. The *spintriat* are so immodest, that few will bear mention. But

some are merely ludicrous; as one which has an ass with a bell about his neck, and a soldier riding him; another with two figures hoisting a woman in a basket into the air. Of those that will just bear mention, is a man with titles around him, as chief of the games; and a woman in ridicule of the modest bath-girl above-mentioned. There is also one marked XIX, on which appears an emperor triumphing in a car: this car is placed on the back of a camel; and behind the emperor is a monkey mimicking him.

A fourth class of medals are called *contorniat* from the Italian *contorniato*, "encircled;" because of the hollow circle which commonly runs around them. They are distinguished from medallions by their thinness, faint relief, reverses sometimes in relief, sometimes hollow; and in general by the inferiority in their workmanship. The opinions of medallists concerning these pieces are very various; some suppose them to have been struck by Gallienus to the memory of illustrious men and celebrated *athletes*, at the time that he caused all the consecration coins of his predecessors to be restored; others ascribe their invention to Greece, &c. but Mr Pinkerton is of opinion that they were only tickets for places at public games. Many of them, notwithstanding their inferior workmanship, are very valuable on account of their preserving the portraits of some illustrious authors of antiquity, no where else to be found. Much dependance, however, cannot be put on the portraits of Greek authors and eminent men found upon some of them; for though we know that the busts of Sallust, Horace, &c. must have been struck when their persons were fresh in the memory of the artists, yet it was otherwise with Homer, Solon, Pythagoras, &c. which are to be found on some of them. Even these, however, are valuable, as being ancient and perhaps traditional portraits of these great men. The last whose portraits are supposed to have been delineated in this way, are Apollonius Tyaneus who flourished in the time of Domitian, and Apuleius in that of Marcus Antoninus. Mr Pinkerton thinks it a confirmation of his opinion concerning these medals, that the reverses always contain some device alluding to public games, as that of a charioteer driving a chariot, &c.

Medal-
lions, &c.120
Of the con-
torniat.SECT. XII. *Directions for making Cabinets.*

WE must now proceed to the last part of our subject, viz. that of giving directions for the formation of cabinets. As we have already seen that the formation of any one must be attended with very considerable expence, it is necessary for every one who attempts this to proportion the cabinet to his own circumstances. There are, properly speaking, three kinds of cabinets. I. Those meant to contain a coin of every sort that has been issued from the mint in every age and country; but this, which may be called the large and complete cabinet, is not to be purchased by private persons. That of Dr Hunter already mentioned is perhaps one of the best private cabinets ever known; and cost 23,000l. but as many duplicates were sold as cost 2000l. by which means the expence was reduced to 21,000. The vast collection made by the king of France cost upwards of 100,000l. The

smaller

Directions
for making
cabinets.

smaller cabinet may be supposed to consist only of middle and small Roman brads, English pennies, groats, &c. with a few medals of the more valuable kind, and may be supposed to incur an expence of from 200 to 1000l. The smallest kind is called a *casquet* of medals, and does not consist of above a thousand at most of various kinds; and consequently the expence must depend on the pleasure of the proprietor.

In the formation of the grand cabinet, it must be observed that the Greek medals of every denomination do not admit of any arrangement by the metals like the Roman; not any regular series of this kind being met with even in the most opulent cabinets. Hence in all collections the civic coins are ranged according to an alphabetical order; and the monarchic in a chronological one. The same rule is to be observed in the Roman consular medals; they are ranged, like the coins of the Greek cities, in an alphabetical series of the families. The Roman imperial coins are only those capable of being arranged according to sizes and metals. Even from this must be excepted the *minimi*, or very smallest coins; which are so scarce, that the only regular series of them in the world is that belonging to the king of Spain, which was formed by a most skilful French medallist, and consists of all the metals. The arrangement of a grand cabinet, according to Mr Pinkerton, is as follows.

" I. The coins of cities and of free states in alphabetical order: whether using Greek, Roman, Punic, Etruscan, or Spanish characters.

" II. Kings in chronological series, both as to foundation of empire and seniority of reign.

" III. Heroes, heroines, founders of empires, and cities.

" IV. Other illustrious persons.

" V. Roman ases.

" VI. Coins of families, commonly called consular.

" VII. Imperial medallions.

" VIII. Imperial gold.

" IX. Imperial *minimi* of all metals.

" X. Imperial silver.

" XI. Imperial first brads.

" XII. Second brads.

" XIII. Third brads.

" XIV. Colonial coins, which are all of brads.

" XV. Greek cities under the emperors, of all metals and sizes. In a smaller cabinet they may be put with the Roman, according to their metal and size. Those without the emperor's head go to class I. tho' struck in Roman times.

" XVI. Egyptian coins struck under the Roman emperors, of all metals and sizes. They are mostly of a base metal called by the French *patin*; it is a kind of pot metal or brittle brads.

" XVII. Contornii, or ticket medals.

" XVIII. Coins of Gothic princes, &c. inscribed with Roman characters.

" XIX. Coins of southern nations using uncommon alphabets; as the Persian, Punic, Etruscan, and Spanish.

" XX. Coins of northern nations using uncommon characters, as the Punic and German.

" In the modern part no series can be formed of copper that will go back above two centuries; but see N° 201.

Directions
for making
cabinets.

quences (chronological series) of gold and silver may be arranged of all the different empires, kingdoms, and states, as far as their several coinages will allow. Those of England and France will be the most perfect. Modern silver is commonly arranged in three sequences; the dollar, the groat, and the penny sizes. The medals of each modern country ought of course to be separated; though it is best to arrange each set in chronological order, let their size of metal be what they will. It may be remarked here, that our modern medals, of the size of a tea-saucer, are only so many monuments of barbarism. The ancient medallions are almost universally but little larger than our crown-piece, though three or four of them may extend to about two inches diameter, but very many modern medals to four inches and more. A large medal always declares an ignorant prince or an ignorant artist. Into the size of a crown-piece the ancients threw more miracles in this way than will ever appear in these monstrous productions."

These directions will likewise apply to the formation of a cabinet of the second kind: but if the collector means to form a series of large Roman brads, he will find the coins of four or five emperors so scarce as not to be attainable in that series, even at any price. He must therefore supply their places with middle brads, as is allowed with regard to Otho; even in the best cabinets, there not being above three coins of that emperor in large brads known in the world; whereas of the middle brads, two or three hundred may exist. For this reason Mr Pinkerton concludes, that in cabinets of the second class, the collector may mingle the large and second brads together as he thinks proper, in order to save expence; though it would not do so well to unite such disproportionate sizes as the large and small. " In the small sequence, however (says he), there can be no harm in his mixing gold, silver, and brads, as chance or curiosity may lead him to purchase any of these metals. And tho' your starched bigotted medallist may sneer because such a sequence would controvert his formal and narrow way of thinking, common sense will authorise us to laugh at the pedant in our turn, and to pronounce such a series more various, rich, and interesting, than if the collector had arranged only one metal, and rejected a curious article because he did not collect gold or silver. In like manner, if, in the modern part of the smaller cabinet, any coin of a series is of high price, or of bad impression, there can be no impropriety in putting another of the same reign, which is cheaper, or better executed, though of a different denomination or of a little larger size. In short, the collector has no rules but in the Greek cities and Roman families, to observe alphabetical order and chronology in every thing else.

TABLES of Ancient Coins.

The most ancient coins, according to Froelich, are distinguished by the following marks, which he accounts infallible. 1. Their oval circumference, and globulous swelling shape. 2. Antiquity of alphabet. 3. The characters being retrograde, or the first division of the legend in the common style, while the next is retrograde. 4. The indented square already described. 5. The simple structure of the mintage. 6. Some of

Ancient Coins. of the very old coins are hollowed on the reverse, with the image impressed on the front. 7. The dress, symbols, &c. frequently of the rudest design and execution.

TABLE I. *Ancient Greek Coins.*

1. Those without impression.
2. With one or more hollow indented marks on one side, and an impression in relief on the other.—Of Chalcidion on the Hellespont, Lesbos, Abdera in Thrace, Acanthus in Macedon, those said to belong to Egium in Achaia. This class continues from about 900 to 700 B. C.
3. With an indented square divided into segments, having a small figure in one of them; the rest blank, with a figure in relief on the obverse.—Of Syracuse and other places adjacent.—Continue from 700 to 600 B. C.
4. Coins hollow on the reverse, with figures in relief on the obverse.—Of Caulonia, Crotona, Metapontum, &c. Supposed by some to be a local coinage of Magna Græcia; but probably of equal antiquity with the former.
5. Coins in which a square dye is used on one or both sides.—Of Athens, Cyrene, Argos, &c.—Of Alexander I. and Archelaus I. of Macedon. Disused in the reign of the latter about 420 B. C.
6. Complete coins, both in obverse and reverse, occur first in Sicily in the time of Gelo, about 491 B. C.
7. Coins of Alexander the Great and his successors. About the time of this hero the Greek coins began to attain to perfection, and were struck of uncommon beauty. It is remarkable, that on the coins of this monarch his own image seldom occurs. The only one yet found of Alexander with his portrait upon it, and struck during his reign, is a silver hemidrachm in Dr Hunter's cabinet, which is represented Plate CCXCII. n^o 3. After his death many coins bear his portrait. Trebellius Pollio informs us, that some coins, particularly those of Alexander, used to be worn as amulets; and many medals are met with in cabinets bored seemingly with that intention.
8. Coins of the successors of Alexander.—Those of the Syrian monarchs almost equal the coins of Alexander himself in beauty. Those of Antiochus VI. are supposed to be the most perfect patterns of male beauty to be met with any where. The Egyptian Ptolemies are somewhat inferior.
9. The coins of the Arsacidæ of Parthia done by Greek workmen.
10. The Greek imperial coins, being such as have the head of an emperor or empress; such as have not these impressions being classed with the civic coins, though struck under the Roman power. None of the imperial coins occur in gold. Of silver there are those of Antioch, Tyre, Sidon, Tarsus, Berytus, Cæsarea. Egyptian silver coins of base metal. Syrian silver coins, which sometimes bear on the reverse the club of Hercules, or the Tyrian shell-fish. Those of Sidon bear the image of the goddess Astarte, or her chariot. Those of Cæsarea in Cappadocia of better work than the Syrian. Lycian coins of good workmanship: on the reverse two harps, and an owl sitting upon them. Silver coins of Gelon in Sarmatia resembling the Sy-

VOL. XI. Part I.

rian. The situation of this town is very much unknown. It seems to have been situated on the north of the Euxine sea, where some Sarmatic or Slavonic tribes were mingled with the Scythians or Goths. The Greek imperial brass coins are very numerous. A series of almost all the emperors may be had from those of Antioch, with a Latin legend on the obverse and Greek on the reverse. Those of Bithynia and Phrygia remarkable for good workmanship. The coins of Tarsus remarkable for their curious views of objects, almost in perspective. The Egyptian coins, from the time of Augustus to Nero, are worse executed than afterwards. From Nero to Commodus they are frequently of admirable workmanship, and in a peculiar style, distinct both from the Greek and Roman. From the time of Commodus they decline, and are lost after the reign of Constantius I. The Egyptian brass coins of the Roman period are likewise of excellent workmanship, especially in the time of Antoninus Pius.

TABLE II. *Roman Coins.*

- I. The consular coins, called also the coins of families, and arranged alphabetically in cabinets, according to the names of the families which appear on them. They are,
 1. *Brass Coins.*—These consist chiefly of large pieces of rude workmanship without any interesting imagery. In cabinets they are generally kept in boxes apart by themselves. The as bears the head of Janus; the semis of Jupiter with S; the triens of Minerva with four ciphers; the quadrans of Hercules with three ciphers; the sextans of Mercury with two cyphers; and the uncia bears the head of Rome with one cipher. In all these pieces the prow of a ship is constantly the figure on the reverse, with very few exceptions. Sometimes, indeed, they have a shell, two heads of barley, a frog, an anchor, or a dog, on the reverse. About the time of Julius Cæsar both the obverses and the reverses of the coins began to be altered.
 2. *Silver.* Of this the denarius was the first and principal coin. It was stamped originally with X, denoting that the value was ten ases. On the reverse was Castor and Pollux, or a chariot of Victory. Afterwards the busts of various deities make their appearance; and in the seventh century of Rome the portraits of illustrious persons deceased are met with: but till the time of Julius Cæsar no figure of any living person is to be met with; Julius himself being the first who assumed that honour. The workmanship on the best and worst silver is much the same. The reverses are very curious, and point out many remarkable events in Roman history; but none of these occur till about a century before the Christian era. The large denarii, with ROMA, are the most ancient; and some of these bear the Pelasgic A, not the Roman. The silver sestertii have a head of Mercury, with a caduceus on the reverse. The quinarii have always a head of Jupiter, with a Victory on the reverse.
 3. *Gold.*—Most of these are of great value. The number of these exceeds not 100; those of brass 200; and of silver 2000. The aureus is the general gold coin; but two or three gold semisses of families likewise occur.

E

II.

Ancient Coins.

II. Roman imperial coins.

1. *Brass*.—This is of three sizes; large, middle, and small. The first forms a most beautiful series, but very expensive. The various colours of the patina have the finest effect. It is the most important of all the Roman coins, and exceeds even the gold in value.

The middle brass is next in value to the former; and in it are many rare and curious coins, particularly interesting to Britons, as elucidating the history of the island. Of these are the triumphal arch of Claudius; the EXERC. BRITANNICUS of Adrian; the coins of Antoninus Pius, Commodus, Severus, with a Victory, VICTORIA BRITAN.; but especially those personifying the country BRITANNIA. "The number of Roman coins relating to Britain (says Mr Pinkerton) is remarkable, more than 20 having been struck at various times; while those personifying Italy, Gaul, Spain, and other regions of the empire, exceed not four or six at most for each country. Only one country vies with Britain, and that is Dacia on the extreme north-east of the empire, as Britain on the extreme north-west. No doubt this circumstance of remoteness in these two countries recommended them to this particular attention, as more expressive of the Roman power.

The small brass series abounds also with curious coins. They are scarce till the time of Valerian and Gallienus, but very common afterwards. Mr Pinkerton recommends, therefore, to form a series in silver as well as brass; both being the cheapest of all the Roman coins. "In this series (says he), it is a common fault to arrange many coins which have been plated with gold or silver, the forgeries of ancient times, but which time has worn off either wholly or in part. All real brass coins have the s. c. till the time of Gallienus; as the senate alone had the power of striking brass, while the emperor himself had that of gold and silver. When the s. c. therefore, is wanting, the coin was certainly once plated; as, in general, the different type and fabric, being those of gold and silver, sufficiently show themselves. With Pertinax, A. D. 192, there is a temporary cessation of small brass; nor after him do any princes occur in that series till Valerian, A. D. 254, excepting Trajanus Decius, A. D. 250 only. After Valerian the series is continuous and common. The brass coinage gradually declined in size from the time of Severus; so that parts of the as could not be struck, or at least it was held unnecessary to strike them. Trajanus Decius attempted in vain to restore the coinage; and Valerian and Gallienus were forced to issue denarii ærei and small assaria. The series of large and of middle brass are of two fixed and known sizes; the former about that of our crown, the latter of the half crown: though after Severus they gradually lessen. But the small brass takes in all parts of the as; and every brass coin not larger than our shilling belongs to this series. The *minimi*, indeed, or very smallest, it is proper to keep apart. The coins of Julius Cæsar in this size are of peculiarly fine workmanship. They bear his portrait reverse of Augustus, or the reverse has a crocodile EGYPTO CAPTA. There are several with Mark Anthony, and some with Cleopatra; but the more

common pieces are those with only numerals on the obverse, which go the length of XIII; probably tickets for the baths. A great many occur in the time of Nero; of which Mr Pinkerton particularises one which has "on the reverse a table ornamented with griffins and other devices. Upon it is placed a wreath of laurel, and a beautiful vase, of which the embossed human figures are so minute, and finished so surprisingly, as to stamp these coins the most exquisite productions of the ancient mint." From the time of Nero to that of Vespasian no small brass occurs: but there are many of this emperor and of his son Titus; while Domitian has as many as Nero, and Domitia his wife has almost as many. Succeeding emperors to the time of Pertinax have also many brass coins; but from his time to that of Valerian there are no real small brass, excepting those of Trajanus Decius. After Gallienus there are a great many coins of this kind; and Mr Pinkerton mentions one in Dr Hunter's cabinet, of an unknown person named Nigrianus. The coin seems to have been struck at Carthage; and our author concludes that he was an African Usurper, father to Nigrinianus.

2. *Silver*.—This series is very complete, and the cheapest of any; especially as the small brass becomes a fine supplement to it: the latter being had in plenty when the silver becomes scarce, and the silver being plentiful when the brass is scarce.

3. *Gold*.—The Roman imperial gold coins form a series of great beauty and perfection; but on account of their great price are beyond the purchase of private persons.

4. *The colonial coins* occur only in brass, none, excepting that of Nemausus, having a right to coin silver. They begin in Spain with Julius Cæsar and Anthony, and cease with Caligula, who took away the privilege of coinage from the Spanish colonies. The most beautiful are those of Corinth. The other remarkable colonial coins are those of Emerita, Ilice, Terraco, Cassandria, Babba, Berytus, Cæsarea, Patra, Emisa, Heliopolis or Balbec, Ptolemais, Sidon, Tyre, Deulton, Dium, Troas, Rhessaina, Neapolis of Samaria, which bears a representation of Mount Gerizzim with the temple on it, Hippo in Africa, &c. On many of these coins we meet with fine representations of temples, triumphal arches, gods, goddesses, and illustrious persons. But coins with those representations are by no means common; the colonial coins till the time of Trajan bearing only a plough, or some other simple badge of a colony. Camelodunum is the only colony in Britain of which we have any coins.

5. *The minimi*.—This includes the smallest coins of all denominations, most of which do not exceed the size of a silver penny. They are the most curious of all; but no series of them was ever formed by any person except the Abbe Rothelin, whose collection formed of all metals passed to the queen of Spain. The reason of the scarcity of these small coins is probably their diminutive size; by reason of which they are mostly lost.

It is surprising that numbers of Roman coins are found through all countries once subject to that powerful people. Some have been met with in the Orkneys,

Ancient
Coins.

neys, and many in the most remote parts of Europe, Asia, and Africa, known to the ancients.

Ancient
Coins.TABLE III. *Coins of other ancient Nations.*

1. The Lydians appear to have invented coinage; though, perhaps, this honour may be disputed with them by the Greeks.

2. The Assyrians, Medes, Babylonians, Phenicians, and Egyptians, had no coins. In the mouths of the mummies are only thin, unstamped, and round pieces of gold to pay Charon's fare.

3. No Indian or Chinese coins are to be met with till a very late period; and even then so rude as scarce to be worth notice. Voltaire mentions a collection of ancient Chinese and Indian coins made by the emperor of China in 1700; but Mr Pinkerton supposes it to have consisted only of the Greek and Roman money which had been introduced into these countries.

4. The Lydian coins have no legends; so that mere conjecture only determines the ancient coins of electrum and silver found in Asia, and different from the Persian, to belong to Lydia. Cræsus coined gold into a form which he called *staters*; and Mr Pinkerton mentions a very ancient gold coin in Dr Hunter's cabinet, which he supposes to have been one of these. It has a globous figure, with indented marks on one side, and on the other a man kneeling, with a fish held out in the left hand, and a sword depending in the right. It weighs four drams; which Josephus tells us was the weight of the Lydian gold coins. In the same collection are other gold coins little inferior in antiquity; the most ancient of which, our author supposes, may have been coined by the cities of Asia Minor, as coinage passed through them to Greece. They are of admirable workmanship, and as much superior to the best Sicilian coins, as the latter are to all the rest in the world. These gold coins are all extremely pale; owing to the want of knowledge in refining gold.

5. Persian coins.—These were first struck by Darius Hystaspes, whence they had the name of *Darics*. They are of gold, and generally have the figure of an archer: they weigh about four drachms; and some occur with the indented mark on one side, while others have figures upon both. The silver coins have generally a king in a chariot of two horses, with a charioteer, and sometimes another figure on foot behind on the obverse; while the reverse presents a ship, sometimes a ram, bull, or other animal. The gold coins, which only had the title of *Darics*, are extremely scarce, having been melted down, as is supposed, and recoined by Alexander the Great on his conquest of Asia.

There is a second series of Persian coins beginning with Artaxares, or Artaxerxes, who overthrew the Parthian monarchy about the year 210. These are large and thin, with the king's bust on one side and the altar of Mathras on the other; generally with a human figure on each side. These coins continue till the year 636, when Persia was conquered by the Saracens. These have only Persian letters upon them, which have never been explained by any antiquaries. Mr Pinkerton says that they seem to partake of the ancient Greek, Gothic, and Alanic.

6. The Hebrew shekels, originally didrachms, but

after the time of the Maccabees tetradrachms, are almost all forgeries of modern Jews, as well as the brass coins with Samaritan characters upon them. They have all a sprig upon one side and a vase on the other. Mr Pinkerton says, that the admission of one of them into a cabinet would almost be a disgrace to it.

7. Phœnician and Punic coins are very interesting on account of the great power and wealth of these nations. The alphabets have been cleared by their relation to the Hebrew and Syriac languages.

8. The coins of Palmyra come under the same denomination with the former, Palmyra being a Syrian city.

9. The Etruscan coins have the characters of that nation, which have been explained by their affinity to the Pelasgic, or oldest Greek and Latin.

10. The Spanish coins are inscribed with two or three alphabets allied to the old Greek or Punic; but the inscriptions have not been sufficiently explained.

11. Gaulish coins.—These are numerous; but the most ancient have no legends; and even after the Greek letters were introduced into Gaul by a colony at Marseilles, the legends are very difficult to be explained.

12. British coins. From a passage in Cæsar's commentaries, it has been inferred that the Britons used some kind of coins even in his time. Mr Pinkerton informs us, that some rude coins of copper very much mingled with tin are frequently found in England; which, he supposes, may be some of the ancient British money. They are of the size of a didrachm, the common form of the nummus aureus among the ancients. After the time of Cæsar, coinage increased among the Britons; and there are many found of Cunobelinus mentioned in the Roman history. Most of these have on one side CUNO, with an ear of wheat, a horse, a kind of head of Janus, or other symbol; and have frequently also the letters CAMU; supposed to mean Camelodunum. Sometimes the word TASCIA occurs; the meaning of which has not yet been explained.

13. Gothic coins of France, Italy, and Spain, to the time of Charles the Great. These have the Roman characters upon them. The Italian coins are mostly of the size of small brass; and in this way we meet with coins of Athalaric, Theodahat, Witigez, and other Gothic princes. Many others occur, the inscriptions of which, though meant for Roman, are so perverted as to be illegible.

TABLE IV. *Modern Coins.*

1. Of Japan.—These are thin plates of gold and silver, of an oval figure, with small marks or figures stamped on them.

2. China.—These are only copper, about the size of a farthing, with a square hole in the middle to put them on strings. The inscriptions on them do not express the name of the sovereign, but the year of his reign; as the *happy year*, the *illustrious year*, &c.

3. The Tartarian coins are rude, having only inscriptions upon them; and they are all posterior to the time of Jenghiz khan.

4. Coins of Thibet, Pegu, and Siam, are much the same,

Modern
Coins.

same, presenting only inscriptions without any figures. They are also of late date.

5. India.—Some old coins have been found in the neighbourhood of Calcutta, of gold, silver, copper, and tin, all mixed together. These have commonly a warrior with a sword on one side and an Indian female idol on the other, of the same form with the celebrated sculptures in the island of Elephanta; but it is impossible to tell what antiquity they are of. The modern coins are the pagoda of gold, worth little more than six shillings; the roupee of silver upwards of two shillings; and the cash, of copper. There is a remarkable set of roupees, which show the twelve signs; a lion on one, a bull on another, &c. but the occasion on which they were struck is unknown. The other coins of India have generally Persian inscriptions upon them.

6. Persia.—The Persian coins since its conquest by the Arabs continue on the Arabian model.

7. Arabia.—Some coins of the petty princes of Arabia are met with as old as the imperial ages of Rome; but till the time of Haroun Alrashid, no regular coinage appears in the vast empire of the Saracens. Even then the reverse has only an inscription, and the obverse is copied from any Greek or Syrian coin which happened to fall in the moneyer's way. The later Arabian coins are mostly silver, with the name and titles of the prince on one side, and some inscription from the Koran on the other. The more modern coins of this country are in the shape of a fish-hook, with Arabic inscriptions.

8. Turkey.—No regular coinage was formed by the Turks till they became masters of Constantinople. They resemble those of Persia and Arabia, having merely inscriptions on both sides.

9. The coins of the African states, at least such as profess the Mohammedan religion, have merely inscriptions without any figures: those of the internal parts are unknown; and no coinage was used among the Mexicans and Peruvians, the only civilized nations in America; but La Hontan mentions an American savage who had a square medal of copper depending from his neck. Mr Pinkerton supposes it to have come from Japan.

10. Modern Italian coins. Besides the Gothic princes mentioned in the former table, the exarchs of Ravenna coined money with the inscription FELIX RAVENNA, &c. The Lombards issued no coins, but there are some still extant of Charlemagne. The following list shows the origin of the coinage in various Italian states.

Rome. Papal coinage originates with Hadrian I. Size of silver pennies, with the Pope's name on one side, and SCOS PETRUS on the other. No coins appear from 975 to 1099, excepting of Leo IX. In 1303 appear pennies of the senate and people of Rome, with Peter on the one side and Paul on the other. There are groats of Clement V. with his portrait three quarters length; but the side-head begins with Sixtus V. in 1470. Gold was first coined by John XXII. in 1316. The coins of Alexander VI. Julius II. and Leo X. are remarkable for beauty and elegance.

Milan. Coinage began with Charlemagne. The

first coin of the family of Visconti occurs in 1330 under Azo. The set finishes with Louis XII.

Naples. Coinage begins in 840 and 880, with Duke Sergius and Bishop Athanasius. The next coins are of Roger of Sicily, and Roger II. in 1130, William I. II. and Tancred. Naples and Sicily were subdued in 1194 by the emperor of Germany; in 1255 Manfred appears; in 1266 Charles of Provence; and others till Joan in 1414: after which follow the house of Arragon, and later kings.

Venice begins in the 10th century. The first coins are silver pennies marked VENECI. Then follow the coins of Henrico Dandolo in 1192, of Ziani in 1205, &c. Gold was first coined at Venice in 1280, and copper in 1471; but the silver groats are as old as 1192.

Florence. Silver was coined here in the 12th century, or before; but in 1252 the first gold coins struck in Europe after the 8th century made their appearance, and were named *florins* from the flower of the lily upon them. They were imitated by the popes, by France, and England. They have on one side St John the Baptist standing, on the other a large *fleur de lis*, and it is not doubted that the French *fleurs de lis* took their origin from these coins. They weigh a drachm, and are no less than 24 carats fine according to Italian writers, and are worth about 12 shillings.

Geneva first began to coin money in 1129, under the government of Conrad. Those of the dukes of Savoy began in the same century.

Aquileia. Coins were issued from this city by the patriarchs from 1204 to 1440.

Ferrara. Coins of the marquises from 1340.

11. French coins. During the race of Clovis, from 490 till 751, the coins are chiefly gold *trientes*, with some *solidi* and *semisses*. The former are of good workmanship, with the heads of kings. The reverse has a cross, with the name of the town where they were struck.

The coins of the second race begin with Pepin in 751, and continue till Hugh Capet in 987. The coins of the first race are elegant, but those of the second entirely the reverse, being almost all silver pennies, and seldom bearing the portrait of the king. Those of Charlemagne have only CAROLUS in the field; while the reverse bears R. F. or some such inscription; though one piece struck at Rome has a rude bust of him. The coins of Louis le Debonnaire are better done.

The third race begins with Hugh Capet in 987, and extends to this time. The coinage did not begin to improve till 1226 under St Louis, when the groat appears. Its name in Italian is *grosso*, in French *grosse*, in English *groat*, or great coin; so called from its size in comparison with the penny; and it passed from Italy to France, to Germany, and to England. After the conquest of France by the English, base coins of many kinds were introduced; and in the year 1574, in the time of Henry III. copper was first introduced into the French coinage. Besides these, the other remarkable coins of France are, the blancs or billon groats, first issued in 1348; the *ecus a la couronne*, or crowns of gold, so called from the crown on one side, and

Modern
Coins.

Modern
Coins.Modern
Coins.

and begun by Charles VI. in 1384; those of Ann of Bretagne in 1498: the *teston*, or piece with the king's head, of Louis XII.; the *Henri* of Henry II. with Gaul sitting in armour, and a Victory in her hand. There are many coins of cardinal Bourbon, elected king in 1589; and in 1642, Louis XIV. takes the title of CATALONIE PRINCEPS. The first *Louis d'Or* made its appearance in 1640; but such was the poverty of France, if we believe certain authors, that in 1719 the duke of Orleans regent struck copper for silver.

12. Spanish coins. The most early series of these consists almost entirely of trientes, finely done. On one side they have the head of the king with his name, and on the other a cross, with the name of the town, commonly in Bætica, or the south part of Spain, where there were a great many Roman colonies, and which was fertile to a proverb. The Moresque coins of Spain, like those of the rest of the Mohammedan states, present us only with insipid inscriptions on both sides. Indeed the Mohammedan religion, by its absolute refusal to allow the representation of any living creature, has prevented the progress of coinage in any degree throughout those regions which it has overspread. The inscriptions on the ancient Spanish coins are in the Cufic or old Arabic characters.

13. Portugal. No description of the coins of this kingdom has yet appeared.

14. Germany. No account of the German coins has been published; though it is well known that not only the emperors, but many of the cities, particularly those called *Hanse-towns*, issued money; and many of the coins issued by the cities were superior in elegance even to those issued by the emperors.

15. Denmark. Here the coinage begins with Canute the Great in 1014. The pieces are at first extremely rude, ornamented only with rings and runic characters. These are succeeded by copper pieces, some of which have a cross, others a pastoral staff on one side, with the letter A on the other. Later coins have strokes 1111, &c. all round them; but those of Harold, Hardicanute, and Magnus Bonus, in 1041, are of neat workmanship, and have the portraits of the princes at half length. The coins of Nicolas or Niel, as he is called by the Dane, are rude, as well as those of Waldemar I. and the celebrated Margaret. In 1376 Olaf caused money to be struck with a grinning full face, with a crowned O upon the other side. "The Swedes (says Mr Pinkerton) took these coins extremely ill, as they thought they grinned at them." Silver was first coined in Denmark by Philippa queen of Erie, and daughter to Henry IV. of England.

16. Sweden. The coinage of this kingdom began in 818 under Biorno, on the plan of Charlemagne. The coins are marked with a cross. Next follow those of Olaf in 1019; which Mr Pinkerton supposes to have been the first true Swedish coins; and that the art of coinage first passed from England into Denmark in the time of Canute the Great, and from Denmark into Sweden. These coins were struck on the English model. During the time that Sweden was subject to Denmark, or miserably harassed by the Danes, the coins of both kingdoms were the same; but after the time of Gustavus Vasa many elegant pie-

ces appear. In 1634, dollars were coined with the portrait of Gustavus Adolphus, who was killed two years before: On the reverse they have the arms of Sweden, with the chemical marks of mercury and sulphur. In 1716, 1717, and 1718, Charles XII. being in extreme want of money, issued small copper coins with Saturn, Jupiter, Mars, &c. upon them, to go for dollars; and on account of this scheme, Baron Goertz, the suggestor of it, was brought to the block.

17. Norway. The coins of this country begins with Olaf in 1056; after which time there are various coins of other princes; but copper was not coined till the year 1343.

Besides the coins already mentioned, there are ecclesiastic coins of France, Germany, Denmark, Sweden, Norway, &c. Those of Denmark and Sweden are numerous, but the Norwegian coins of this denomination are rare. Mr Pinkerton describes a silver one in his possession as having arms and a mitre, with the inscription on one side SANCTUS OLAWS REX NORVEY; on the reverse OLAWS DEI GRA. ARCEP. NID'SEN, meaning NIDROSIENSIS, or archbishop of *Nidros*, now Drontheim.

18. Bohemia. The coinage of this kingdom appears at a very early date, viz. in the year 909, under duke Boleslaus I. These coins are followed by others of Boleslaus II. and Emma his wife in 970; of Boleslaus III. in 1002; Jaromir in 1020; Udalrich in 1030, and other princes. The *bračete* money of Otocar I. was coined in 1197.

19. Poland. The coinage of this country is nearly as ancient as that of Bohemia. The coins are on the German model, but no particular account of them has been published.

20. Russia. None of the Russian money appears to be more ancient than the 13th century. The first are the *kopecks* or silver pennies, which have upon them rude figures of animals on one side, and a man standing with a bow or spear on the other. There are likewise coins of Moscow struck by Aristoteles the architect in 1482. The *roubles* or dollars and their halves. There are some of the impostor Demetrius in 1605, which are very scarce.

21. Prussia. The first Prussian coins were struck at Culm by the Teutonic knights in 1230. They were silver pennies, and upon the German plan. In the next century were struck shillings, groats, and *schots*; the last were the largest, and are extremely rare. They have the Prussian shield, an eagle surmounting a cross, with a rose-shaped border, MONETA DOMINORUM PRUSSIE: on the reverse is a cross fleury, within a border of a similar kind, having the inscription HONOR MAGISTRI, JUSTITIAM DILIGIT. — Gold coins were struck in the same century. In the time of Copernicus the money was so debased, that 12 or 13 marks were worth but one of pure silver.

22. England. The English coins are of various kinds. 1st. *Heptarchic*. These are only of two sorts, viz. the *sheatta* or penny of silver, and the *flyca* of copper. Few of the pennies appear till after the year 700; though some are met with which bear the name of Ethelbert I. king of Kent, as old as 560. At first they had only rude figures of serpents, but in latter

Modern
Coins.

times legends were likewise added. Most of these pennies have pagan symbols upon them. The *styca* was only coined in Northumberland, and was a very small piece about the value of half a farthing.

2d. Coins of the *chief monarchs* of England. Mr Pinkerton denies that an end was put to the heptarchy by Egbert in 832, as is commonly supposed; though he owns that he was *chief monarch* of the country, as several others had been before him. Edgar, who reigned in 959, according to him was the first king of England; and the coins of the chief monarchs form almost a complete series from the time of Egbert to Edgar. The only chief monarch of whom there are no coins is Ethelbald, who reigned in 857. Most of these coins bear rude portraits; but the reverses are sometimes curious and interesting. Some have views of cathedrals and other buildings; particularly one of Edward the Elder in 900; which has the cathedral of York with three rows of windows, round arched as the other Saxon and Norman buildings; the Gothic arch being quite unknown till after the 12th century. Some coins of Anlaf king of Northumberland have the famous raven, the Danish ensign; and those of other princes have frequently very curious reverses.

3d. *Ecclesiastic* coins appear of the archbishops of Canterbury, Wulfred, in 804, Ceolnoth in 830, and Plegmund in 889.

4th. Coins of the *kings* of England. The silver penny, which had begun during the heptarchy, continued to be the general coin after the kingdom had been united under one head; and extends in a continued series from Egbert almost to the present reign. The only kings wanting are Edmund Ironside, Richard I. and John. At first the penny weighed $22\frac{1}{2}$ grains; but towards the close of the reign of Edward III. it fell to 18 grains; and in that of Edward IV. to 12. In the time of Edward VI. it was diminished to eight grains; and in Queen Elizabeth's reign to $7\frac{1}{4}$; at which it still continues.

Halfpennies and farthings were first struck in silver by Edward I. in 1280; the former continued to the time of the commonwealth, but the latter ceased with Edward VI. The groat was introduced by Edward III. in 1354, and continues to this day, though not in common circulation. The half-groat or two-pence is of the same date, and also continues to the present time.

Shillings were first coined by Henry VII. in 1503. At first it was called *testoon*, from the *teste*, *tete*, or head of the king upon it; the name *shilling* being derived from the German *schelling*; under which appellation coins had been struck at Hamburgh in 1407. The crown was first coined in its present form by Henry VIII. Formerly it had appeared only in gold, whence the phrase of crowns of gold; though these indeed were the largest gold coins known for a long time in France and other countries on the continent, being worth about 10s. sterling. They had their name from the crown stamped on one side, and were first coined by Charles VI. in 1384, and continued till the time of Louis XIV. The half-crown, sixpence, and three-pence, were coined by Edward VI. In 1558 Queen Elizabeth coined three halfpenny, and in 1561 three farthing, pieces; but they were discontinued in 1582.

From the year 1601 to the present time the coins of England remain the same.

Gold was coined in England by Henry III. in 1257; the piece was called a *gold penny*, and was larger than the silver one; and the execution is by no means bad for the time. The series of gold coinage, however, commences properly from Edward III. In 1344 this monarch first struck florins, in imitation of those in Italy; and it is remarkable, that though these coins at the time they were first issued bore only six shillings value, they are now intrinsically worth 19s.; so much has the value of gold increased since that time. The half and quarter florin were struck at the same time, but only the last has been found. The florin, however, being found inconvenient, gave place to the noble of 6s. 8d. value, and exactly half a mark. The latter had its name from being a limited sum in accounts; and was eight ounces in weight, two-thirds of the money pound. It is sometimes also called *felibra*, as being one half of the commercial pound of 16 ounces. The noble had its name from the nobility of the metal; the gold of which it was coined being of the finest sort. Sometimes it is called *Rose Noble*, from both sides being impaled in an undulating circle. It continued with the half and quarter noble to be the only gold coin till the angels of Edward IV. appeared in 1465. These had their name from being stamped with the image of Michael and the dragon. The angelites of 3s. 4d. value were substituted in their place. In 1527 Henry VIII. added to the gold coins the crown and half-crown at their present value; and the same year he gave *sovereigns* of 22s. 6d. and *ryals* of 11s. 3d. angels at 7s. 6d. and nobles at their old value of 6s. 8d. In 1546 he caused sovereigns to be coined of the value of 20s. and half sovereigns in proportion. His gold crown is about the size of our shilling, and the half-crown of sixpence, but thin. All his coins, however, gold as well as silver, are much debased; and it was not without much labour and trouble that Edward VI. brought it back to its former standard. On the union of the two crowns, James gave the sovereign the name of *unite*; the value continuing of 20s. as before. He coined also rose-ryals of 30s. value, spur-ryals of 15s. angels of 10s. and angelets of 5s. Under the commonwealth, the sovereign got the name of the *twenty-shilling* piece, and continued current till the coinage of guineas. These were so called from their being coined of Guinea gold, and were at first only to go for 20s. though by an universal but tacit consent they always passed for 21s. Half-guineas, double guineas, and five guinea pieces, were also coined during the same reign; which still continue, though the two latter are not in common circulation. Quarter guineas were coined by George I. and likewise by his present majesty; but they were found so troublesome on account of their small size, that they were stopped within a year or two when received at the bank of England; and thus are not to be met with at present. A few pieces of 7s. value have likewise been coined, and are known by the lion above the helmet; but none have been issued. In 1688 the guinea rose to 21s. 6d. and continued to increase in value till 1696, when it was as high as 30s.; but after the recoinage in 1697 and 1698 it fell by degrees, and in 1717 was at its old standard of 21s. and at that time silver

Modern
Coins.

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Modern
Coins.Modern
Coins.

was fixed at its present standard value, viz. as 1 to 15½ in weight.

Though the first money coined in Britain, as we have already observed, was copper, yet, excepting the Northumbrian stycas, no copper coin was found in England from the time of the Saxon conquest till the year 1672. An aversion to a copper coinage it seems was prevalent throughout the nation; and Queen Elizabeth, who without hesitation used base money for Ireland, yet scrupled at coining copper for England. This want of small coin occasioned such an increase of private tokens for halfpennies and farthings, that it became a serious object to government; and in 1594 a copper coinage was seriously thought of. This year a small copper coin was struck about the size of a silver two-pence, with the queen's monogram on one side, and a rose on the other; the running legend on both sides being *THE PLEDGE OF A HALFPENNY*. Of this there are patterns both in copper and silver, but both of them soon fell into disuse. On the 19th of May 1613, King James by royal proclamation issued farthing tokens. They are generally of the same size with the two pence, with two sceptres in saltier surmounted with a crown, and the harp upon the other; with an intention, as it would seem, that if they were refused in England they might pass in Ireland. In 1635 Charles I. coined those with the rose instead of the harp; but the circulation of these was entirely stopped by the vast number of counterfeits which appeared, and by the king's death in 1648. After this the private tokens began again to circulate, till put a stop to by the coinage of farthings in 1672. The workmanship of the tokens is quite contemptible. In 1672 the halfpence as well as the farthings which had been struck two years before began to circulate. They were of pure Swedish copper, the dyes engraved by Roettier; and they continued till the year 1684, when some disputes arose about the copper lately obtained from the English mines. Tin farthings were coined with a stud of copper in the centre, and inscribed round the edge as the crown pieces, with *NUMMORUM FAMULUS*, 1685 or 1686. In 1685 halfpence of the same kind were coined; and the tin coinage continued till the year 1692, to the value of more than L.65,000; but next year the tin was all called in by government, and the copper coinage recommenced. The farthings of Queen Anne are all trial pieces excepting those of 1714, the last year of her reign. "They are (says Mr Pinkerton) of exquisite workmanship, exceeding most copper coins either ancient or modern, and will do honour to the engraver Mr Croker to the end of time. The one, whose reverse is Peace in a car, *PAX MISSA PER ORBEM*, is the most esteemed; and next to it the *BRITANNIA* under a portal. The other halfpence and farthings are less valuable.

23. Scotland. Silver pennies of Alexander I. who reigned in 1107, are believed to exist; and there certainly are some of Alexander II. in 1214. There are likewise coins of David in 1124; but perhaps none of Malcolm IV. his successor, whose reign was very short. There are many coins of William I. in 1165; and a large hoard of his pennies was found at Inverness in 1780.

The money of Scotland continued to be of the same value with that of England till the country was drain-

ed by the vast ransom of David II. after which it became necessary to reduce its size; and so much did this diminution affect England, that Edward III. found himself obliged to lessen the English coin also. The diminution of the Scottish coin, however, continued still to go on until it became impracticable to keep par with that of England. In the first year of Robert III. it passed only for one half its nominal value in England: in 1393, Richard II. ordered it only to go for the weight of the genuine metal it contained. In 1600 it had sunk to such a degree as to pass only for a twelfth part of the English money, and continued at that low ebb till the coinage of Scotland was entirely cancelled by the Union of the two kingdoms.

Of silver coins we have only pennies till the year 1293, when Edward I. having coined halfpence and farthings, Alexander III. of Scotland coined also halfpence, of which we have a few, but no farthings are to be met with; but there are silver farthings of Robert I. and David II. The latter introduced the groat and half-groat, which completed the set of Scottish silver. It continued unaltered till the time of Queen Mary, when they all ceased to be coined in silver, on account of the high price of that metal. In 1553 shillings were first coined, with the bust of the queen on one side and the arms of France and Scotland on the other. The silver crown was first coined in 1565, which went for 30 s. Scots; lesser pieces of 20 s. and 10 s. having likewise been struck, and marks of silver, worth 3 s. 4 d. English, were also coined about the same time. These coins have upon them the marks xxx. xx. x. to denote their value. They are commonly called Cruickstone dollars, from the palm-tree upon them, mistaken for a remarkable yew at Cruickston near Glasgow, where Henry Darnley resided. It is described, however, in the act as a palm, with a "shell-padoc" (a tortoise) crawling up. This alludes to Darnley's marriage with the queen, as the motto from Propertius *DAT GLORIA VIRE* also implies. The motto *NEMO ME IMPUNE LACESSIT* first appears on the Scottish coins in 1578, and the invention is given to the celebrated Buchanan. In 1582, the crown of an ounce weight went for 40 s. Scots, and was accordingly marked XL.; in 1597 the mark was L. the Scottish money being then only one-tenth of the English: the mark was LX in 1601, the value being then reduced to one twelfth, at which it has ever since continued. In the time of Charles I. half marks, 40 and 20 penny-pieces, were coined. In 1675 the Scottish dollars first appeared, in value 56 s. Scots, with halves and quarters of proportional value. In 1686, James VII. coined 60, 40, 20, 10, and 5 s. pieces; but only those of 40 and 10 s. are known, with these numbers under the bust. At the Union of the kingdoms, all the Scottish coins were called in, and recoined at Edinburgh, with the mark s under the bust to distinguish it; since which there has been no coinage in Scotland. The Scottish silver coins are in general equal, if not superior, in the workmanship to the English.

Gold was first issued by Robert II. about 30 years after Edward III. of England had coined the same metal in that country. The pieces were at first called St Andrew's, from the figure of that tutelar Saint upon

Modern
Coins.

upon the cross, and who appears on the obverse with the arms of Scotland, and on the reverse a lion in a shield. The lion was another name for the largest gold coin in Scotland, from the arms of the kingdom upon it. The next was the unicorn, under James III.; which were followed by the bonnet-pieces of James V. These last are of admirable workmanship, being almost equal to the ancient coins in this respect. In imitation of the French, the monarch we speak of diminished the size of the coin without lessening its weight; an improvement not adopted by the English for a whole century. The last gold coined in Scotland was the pistole and half pistole, of twelve and six pounds Scots. These coins have the sun under the head. The gold coins of Scotland fell in the same proportion with the silver.

The copper coinage of Scotland is of more early date than that of England. It was preceded by money of *billon*, or copper washed with silver, called black money. James III. first coined black farthings in 1466; and this is recorded by historians as one of his greatest faults. This kind of coinage, however, continued as late as the reign of James VI. In his time the true copper coinage began; but as the value of Scottish money was now declined almost to the utmost, the pieces suddenly assumed a form almost resembling that of the French coins. The *bodde*, so called from Bothwell the mintmaster, being equal in size to the *liard*, and worth two pennies Scottish, was struck. The *billon* coin, formerly called *bas-piece*, and worth six pennies Scots, was now coined in copper, and termed the *baw-bee*. Thus it corresponded with the French half fol and English halfpenny, the Scots penny being now equivalent to the French *denier*. Some pieces named *Atkinsons* were coined by James VI. in 1582, when the Scottish money was to the English as 1 to 8; but on its being still farther reduced, they went for 8 pennies, a third more than the value of the *baw-bee*. Besides these there were the *hardie* and *plack*, the former being worth three and the latter four pennies Scots. This coinage continued through the reigns of Charles I. and II. but Scottish coins of the former are, perhaps, the scarcest of any.

24. Ireland. The first coins introduced into this kingdom seem to have been those of the Danes, and which have only a number of strokes around them instead of letters. In the tenth century, however, this coinage had been considerably improved; and in 930 and 994 there are pennies struck in Dublin, with the inscription ON DVFLI or DYFLI, *Duffin* or *Dyffin* being the Danish name of that city. There are likewise coins of the Irish princes themselves, and of the English monarchs, struck in Ireland as early as the ninth century; and it is asserted by some, that Ireland even in these days had been conquered by England; of which, indeed, these coins seem to be a proof. None of the Irish coins of Henry II. are to be met with, but we have some of the coins of John; and from his time to that of Henry V. the Irish coins are known by a triangle inclosing the king's head, which appears also upon the coins of other nations at this period. The harp does not appear upon the Irish coins till the time of Henry VIII. Till the time of this monarch, the English and Irish coins are the same; but the same de-

N^o 201.Modern
Coins.

basement of the coin which at that time took place in England extended also to Ireland; but in 1601 copper halfpence and farthings were coined also for this kingdom. These circulated in Ireland when James VI. issued his farthing-tokens of copper, the latter being of two sizes, that if they failed in England they might be sent to Ireland as pennies and halfpence. In 1635 a mint was established in Dublin by Charles I. but it was stopped by the Irish massacre, and the many disturbances which followed; since which time the scheme has not been resumed. After the massacre, St Patrick's halfpence and farthings were coined by the Papists, bearing the legends FLOREAT REX, and on the reverse ECCE GREX; on the farthing QUIESCANT PLEBS. Copper-tokens were struck by towns and tradesmen, as in England and Scotland. In 1680, halfpence and farthings were issued by authority, with the harp and date. In 1689, James II. having invaded Ireland, instituted a mint, and coined shillings and half-crowns of all the refuse metal he could find, particularly some brass guns were employed, whence the coinage is commonly called *gun-money*. Even this metal, however, soon became so scarce, that a diminution in its size is quite apparent from June 1689 to July 1690; and as the month of their mintage is marked upon them, this decrease is easily perceived. In March 1690, pennies of lead mixed with tin were issued; and on the 15th of June the same year, crowns of white metal were coined; but these are now very scarce. In 1722, the patent for coining halfpence and farthings was given to William Wood, which excited such discontent in Ireland. From the small size allowed by the patent to these pieces, it was supposed that the patentee would have gained 60,000*l.* but as he caused them to be struck of a size still smaller, his gains were estimated at 100,000*l.* The coins, however, are of admirable workmanship, and very fine copper, bearing the best portrait of king George I. to be found any where. Sir Isaac Newton, at that time at the head of the mint, declared that they were superior to the English coins in every thing except the size. In 1737 the Irish halfpence and farthings, with the harp on the reverse, were coined, and continue to the present time. In 1760, there was such a scarcity of copper coin, that some private persons applied for leave to coin halfpence, which appeared with a very bad portrait of George II. and the words VOCE POPULI around it. No gold or silver has been coined in Ireland since the massacre of 1641.

TABLE V. *Modern Medals, properly so called.*

1. Scottish medals. These take the lead in the present article, the first modern medals of gold being those of David II. struck between the years 1330 and 1370. Only two of them now exist; one in the collection of Mr Barker of Birmingham, and the other in that of Dr Hunter. In 1478, there is a medal of James III. sent to the shrine of St Amboise in France. It is described as of two inches and a third in diameter; the weight near two ounces; having on the obverse a beardless king, with long hair, sitting on a throne, holding in one hand a naked sword; in the other a shield, with the Scottish arms. On the borders of the canopy above the throne is an inscription in Gothic letters, EN MI DEFFEN, being corrupt French

Modern
Medals.Modern
Medals.

French for *In my defence*; a common motto in the Scottish arms. Above the canopy is VILLA BERWICI: the reverse bears St Andrew and his cross, SALVUM FAC POPULUM TUUM DOMINE. There is also a medal of James IV. in the collar of St Michael, having on the reverse a Doric pillar surmounted by a young Janus, standing on a hill, beyond which is the sea, and land on either side. This, however, is by some suspected to be a forgery.

The most remarkable Scottish medals are those of the unfortunate Mary. The first is properly French, having been issued at her coronation as queen of France, along with her husband king Francis II. On the obverse of this piece there are portraits of Francis and Mary, face to face, with three legends around them, the outermost containing their titles; the middle one the following sentence: HORA NONA DOMINUS J. H. S. EXPIRAVIT HELLI CLAMANS; the innermost the name of the city (Paris). On the reverse are the arms of France and Scotland. Fine testoons were also coined upon the same plan, and are now so rare that Dr Hunter gave ten guineas for one he has in his collection. The same portraits appear on the fine crown of Mary and Henry, in 1565, which is so rare as to be esteemed a medal of the highest value; and Mr Pinkerton imagines, that if brought to a sale it would bring 40 or 50 guineas.

Another remarkable medal of Mary represents her full faced, and weeping, with the inscription, O GOD GRANT PATIENCE IN THAT I SUFFER VRANG. The reverse has in the centre, QUHO CAN COMPARE WITH ME IN GRIEF, I DIE AND DAR NOCHT SEEK RELIEF; with this legend around, HOUT NOT THE (figure of a heart) QUHAIS JOY THOU ART. There are also many counters of this unfortunate princess, being thin silver-pieces of the size of a shilling. "They all appear (says Mr Pinkerton) to have been done in France by Mary's direction, who was fond of devices. Her cruel captivity could not debar her from intercourse with her friends in France, who must with pleasure have executed her orders, as affording her a little consolation."

The coronation medal of Charles I. struck at Edinburgh for his inauguration, June 18. 1663, is remarkable as being the only one ever coined of Scottish gold, and the first in Britain struck with a legend on the edge. With respect to the workmanship, it is inferior to Simon's. Of these medals only three are known to exist, of which one is in the Museum. It is not uncommon in silver; in which case it sometimes wants the legend on the edge.

2. Italian medals. These appear in the 15th century, and from that time successively in most European countries. Vittore Pisano, a painter of Verona, is celebrated as the restorer of the art, but it remains to be accounted for how the medals of king David already mentioned came to exist so long before. Mr Pinkerton considers this artist rather as an inventor than a restorer, his medals having no resemblance to the ancient coins, as being large, and all cast. They were first modelled in wax, then a mould taken from the model in fine sand, and other ingredients. After a good cast was procured, it was touched up, and made a model for the rest. These medals of Pisano are almost always inscribed *Opus Pisani Pictoris*. The

portraits of a great number of illustrious men were done by him in this manner; and in the British Museum is a large brass medal of Pisano by himself.— Other artists were Boldu, Marefcotto, Matthæus de Pastus, Sperandes, Misaldone, &c. Towards the end of the century, however, the medals began to assume a more elegant appearance; and the Papal ones are not only the most elegant but the most ancient series of all the modern medals. The improvement began in the reign of Alexander VI. so famous for his own crimes, and those of his nephew Cæsar Borgia. His successors, Julius II. Leo X. Hadrian VI. and Clement VII. had many of their medals designed by Raphael, Julio Romano, and other eminent painters, and the engraving executed by artists of equal merit. Among these were the celebrated Cellini, and the noted Paduan forgers of Roman coins, Cavino and Bassiano. In 1644 Cormanni, a medallic artist, was imprisoned on account of a piece which represented the Pope upon one side, and Olympia Maidalchina, the relation of his holiness, on the other. The unfortunate Cormanni poisoned himself. About this time the family of the Hamerani, originally from Germany, began to engrave the papal medals; which they did with surprising merit for several generations. Each of the daughters did a fine medal, as we are informed by Venuti.

Besides the papal medals, there are many issued by the various states of Italy. There are medals of Frederic II. of Sicily in 1501, of several Venetian generals in 1509, of Alfonso duke of Ferrara in 1511, and of the celebrated Andrew Daria in 1528.

3. French medals. Till the reign of Louis XIV. the medals of this country are neither fine nor numerous; but this monarch exceeds all modern princes in this way. Many of his pieces are well designed and executed, though objectionable on account of their falsehood.

4. Danish medals. These appear of Christian II. in 1516, of Frederic and Sophia in 1532, of Frederic I. and Christian III. in bonnets worn in the 16th century. The elephant of the house of Oldenburg is frequent upon Danish medals.

5. Swedish medals. These begin with Gustavus Vasa; and several of Christina are likewise to be met with. There are also some curious ones of Charles XII.

6. Dutch medals. These begin in 1566; and many of them are remarkable for maps and plans, which must be very interesting to posterity. "Had the Greeks and Romans (says Mr Pinkerton) given us maps and plans, what a fine system of ancient geography and topography a cabinet of medals must have been!"

7. Medals of Spain, Portugal, and Germany. The Spanish medals began with Gonsalo in 1503, many of which are curious and interesting. Under Cha. V. there are many curious Spanish medals; but those of Germany begin with Frederic in 1453. They are extremely numerous; as we may easily suppose from the greatness of the empire, and the various states which compose it. There is a famous medal of Sebastian king of Portugal, famous for his unfortunate expedition into Africa in 1578; with his bust, full face, and three quarters in length. On the reverse is a shell-fish in the sea, with the moon and seven stars, bearing the inscription SERENA CALSA PAVENT. There is also a

F

curious

Modern
Medals.

curious lozenge-shaped coin of the same with the arms of Portugal, and the king's name and title: On the reverse is a cross with the inscription *IN HOC SIGNO VINCES*, 1578.

8. Satyric medals. These began almost as soon as the knowledge of the art of coining medals was revived. They seem to have been almost unknown to the ancients. One indeed of the Emperor Gallienus is supposed to have been satyric. It has on the front the emperor's bust, with the inscription *GALLIENÆ AUG.* the reverse is Peace in a car, *PAX UBIQUE*; but this has been proved to be only a blundered coin. Some other ancient medals, however, are not liable to this objection. The first modern satyric medal published was that of Frederic king of Sicily in 1501 against his antagonist Ferdinand king of Spain. It has on one side the head of Ferdinand, with the inscription *FERDINANDUS R. AR. VETUS VULPES ORBIS*; on the reverse a wolf carrying off a sheep, *JVGVM MÆVM SVAVE EST ET ONVS MÆVM LEVE*. Many others have been struck, of which the wit would now perhaps be difficult to be found out: but of all nations the Dutch have most distinguished themselves in this way; and paid very dear for their conduct, as they brought upon themselves by one or two satyric medals the whole power of France under Louis XIV.

9. English medals. The first of these is in the duke of Devonshire's collection. It is of a large size, and done on the plan of the early Italian medals. It has on the reverse the arms of Kendal, with the inscription *TEMPORE OBSIDIONIS TURCORUM, MCCCCLXXX*. On the other side is a portrait with *IO. KENDAL RHODI TVRCVPELLERIVS*. It was found last century in Knarborough forest; but Mr Pinkerton has no doubt of its having been done in Italy. The next is that of Henry VIII. in 1545, and is of gold, larger than the crown-piece, with the king's head upon the obverse, and three legends within each other, including his titles, &c. The reverse contains two inscriptions, declaring him to be the head of the church; the one in Hebrew, the other in Greek. It was imitated exactly by Edward VI. whose coronation-medal is the first we have. There are two medals of Philip and Mary, whose execution is tolerably good; but those of Elizabeth are very poor. There are good medals of James I. and his queen; with a fine one of Charles I. and Henrietta, though the workmanship is much inferior to the antique. There are many good medals of Charles, with various devices upon their reverses. Under the commonwealth the celebrated Simon produced medals which are deservedly reckoned the most admirable pieces of modern workmanship. There are many good medals of Charles II. James II. and William III. Some are also found of James after his abdication. Some fine gold, silver, and copper medals, were issued in the time of Queen Anne; the two last affording a series of all the great actions of the duke of Marlborough. About the year 1740, a series of medals was engraved in London by Daffier, a native of Geneva, containing all the kings of England; being 36 in number. They are done upon fine copper, and executed with great taste. There are besides many

medals of private persons in England; so that it may justly be said, that this country for medals exceeds almost every other in Europe.

To this account of modern coins and medals we shall add that of another set called *siege pieces*, and which were issued during the time of a siege in cases of urgent necessity. These were formed of any kind of metal; sometimes of no metal; and Patin mentions a remarkable one struck at Leyden in 1574, when the place was besieged by the Spaniards. It was of thick paper or pasteboard, having a lion rampant, with this inscription, *PVGNO PRO PATRIA*, 1574; and on the reverse, *LVGDVNVM BATAVORVM*. There are various siege-pieces of Charles I. both in gold and silver, some of the latter being of the value of 20 shillings.

The *nummi bracteati* are a species of modern coins somewhat between counters and money; and have their name from the word *BRACTEA*, a spangle or thin bit of metal. They are commonly little thin plates of silver, stamped as would seem with wooden dies upon one side only, with the rude impression of various figures and inscriptions. Most of them are ecclesiastic, and were struck in Germany, Switzerland, Denmark, Sweden, Norway, and a few in Poland. They continued to be in use in Germany till the end of the 15th century; and some are still used in Switzerland at this day.

Table of Abbreviations used in the Legends of Medals; from Mr Pinkerton.

Greek Coins.

A	
A. Athens, Argos, Aulus, Asylum; primi or first; as <i>Ἐπειτὸν Α. Ἀσίας</i> , "Ephesians, first people of Asia"	APIM Ariminum
A. Abbatius, Abdera, Abydus on Hellepont	APSI. Arsinoe
AB. Abydus in Egypt	APT. Aryca.
ABT. Abydus on Hellepont	APX. <i>Ἀρχιεπίσκοπος</i> or <i>Ἀρχὸν</i> , high priest or magistrate
AE. AEE. Athens	ΑΣΙΑΡΧ. Asiarchæ, presidents of the games of Asia (B)
AIG. Aegina	ΑΣ. Asylum
AIGOSΠΟ. Aigospotamos	A. Σ. <i>Πρωτοὶ Συρίας</i> , First of Syria
AIA. Aelius, Aelia Capitolina	ΑΣΚ. Ascalon
AIN. Aenos	AT. Atabyrium
AK. -- AKPATAN. Agrigentum	ATAP. Atarnæ
AKI. Acilium	ATΓ. Augustus
AKT. Actium	ATPH. Aurelius
ALE. Alexandria	AT. ATT. <i>Αυτοκράτορ</i> , Emperor.
AM. Amyntas	ATTION. <i>Αυτονομία</i> , enjoying their own laws
AMBP. Ambracia	AΦI. Aphyta
AMΦI. Amphiloehia	AΦP. Africanus
ANΘ. <i>Ἀνθυπατοῦ</i> , Proconsul	AX. Achæi
ANTIΣ. Antissa	B
ANA. Anactoria	B. <i>Βουλὴς</i> , Council: Berytus; Bithynia
ANTI. Antium	ΒΑΓΗΔΑΟ. Bagadaonia
AN. Ancyra	ΒΑΛ. Valerius
ANT. Antoninus, Antioch	ΒΗ. Berytus
ΑΣ. Axus in Crete	BITON. Bitontum
AON. Aonitæ	ΒΟI. Bœotia
AOTE. Avenio, Pell.	ΒΡΤΝ. Brundisium
ΑΠI. Appius	ΒΥ. Byzantium
ΑΠΙΑ. Apamea.	Γ
ΑΠΟ. Apollonia	Γ. ΓΡ. ΓΡΑΜ. Grammaticus, or keeper of the records
ΑΠΤΑ. Aptara	Γ. Gaius, or Caius
AP. Aradus, Harma	ΓΑ. Gallus, Galerius, Gallienus
APGE. Argennos	Γ. <i>Γνωρίμου</i> , Illustrious
APΓ. Argos	
API. Aricanda	ΓΕΑ.

(B) There were also Syriarchæ, Lyciarchæ, Galatarchæ, Bithyniarchæ, Cappadociarchæ, &c. *Morel. Spec.*

Abbrevia- tions.	ΓΕΛ. Gelas
	ΓΕΡ. Germanicus
	ΓΝ. Gneius
	ΓΟΡΤΥ. Gortyna
	ΓΡΑ. Gravisca
	Δ
	Δ. Decimus, Dynmæ
	ΔΑΚ. Dacicus
	ΔΑΜ. Damascus
	ΔΑΡ. Dardanum
	ΔΗ. Δημος, the people
	ΔΗΜΑΡΧ. ΕΞΟΥΣ. with Tri- bunitian power
	ΔΕ. Decelia
	ΔΕΚ. Decius
	ΔΕΡ. Derbe in Lycaonia
	ΔΗ. Delos
	ΔΙ. Diospolis
	ΔΡΕ. Drepanum
	ΔΥΡ. Dyrrachium
	Ε
	Ε. Eryce
	Ε. ΕΡΕΣ. Erefus
	ΕΛΕΤ. Eleusis
	ΕΛΕΤΘ. Ελευθεροι, Free
	ΕΠΙ. Epidaurus
	ΕΡΙ. Eriza in Caria
	ΕΡΧ. Erchia
	ΕΡΥ. Erythrae
	ΕΤ. ΕΤΟ. Ετους, Year
	ΕΤ. Etenna in Pamphylia
	ΕΧ. Εχουσις, Power
	ΕΥΒΟ. Euboea
	ΕΥΣ. Ευσεβης, Pious
	ΕΥΤ. Ευτυχης, Happy
	ΕΦ. ΕΦΕ. Ephesus
	Ζ
	ΖΑ. Zacynthus
	ΖΑΝΚΑ. Zancle, Messina an- ciently so called
	Η
	Η. Elium
	ΗΓ. Ηγεμονος, President
	ΗΡΑΚ. Heraclea
	Θ
	ΘΑ. Thafus
	ΘΕ. Thespiae
	ΘΕΣ. Thessalonica
	ΘΕ. ΘΗΒ. Thebae
	Ι
	Ι. ΙΕΡ. Ιερας, Sacred
	ΙΕΡΑΓΥ. Hyerapytha
	ΙΚΑΡ. Hiccarā
	ΙΛΙ. Ilium
	ΙΟΥ. Iulia a city, or Julius
	ΙΟΥΑ. Julia
	ΙΠΑ. Hippana
	ΙΡ. Irene Inf. Pellerin.
	ΙΣ. Ifus, Ithaca
	Κ
	Κ. Caius; Κοιντος, Quintus
	Κ. ΚΑΙΣ. Caesar
	Κ. Κ. Κοινον Κιλικιας, Commu- nity of Cilicia
	ΚΑΙΛ. Caelius
	ΚΑΛ. Chalcedon
	ΚΑΛΛΙ. Callipolis
	ΚΑΜΑ. Camara
	ΚΑΝ. Canata
	ΚΑΠ. Capua
	ΚΑΠΠ. Cappadocia
	ΚΑΡ. Carthage
	ΚΑΡΤ. Carthago
	ΓΑΤ. Caulonia
	ΚΕ. Ceos
	ΚΕΦ. Cephalædis
	ΚΙ. Cianus, Cibæum
	ΚΙΛ. Cilbani
	ΚΛ. Clæonæ, Claudius
	ΚΛΑ. Clazomene
	ΚΝΙ. Cnidus

ΚΟ. Corinth	Π
ΚΟΙΝ. Κοινον, Community	Π. Παρ, Προς, upon
ΚΟΛ. Κολωνιας, Colony, Colo- phon	Π. ΠΟΠΛ. Publius
ΚΟΜ. Commodus	Π. ΠΑ. Paphos or Paros
ΚΟΡ. Corcyra	ΠΑΙΣ. Pæstum
ΚΡ. Cragus in Lycia	ΠΑΝ. Panormus
ΚΡΑ. Cranos	ΠΑΡ. Paropinum
ΚΡΗ. Crete	ΠΑΡΙ. Paros
ΚΤΗ. Ctemenæ, Pell.	ΠΑΡΘ. Parthicus
ΚΥ. Cuma, Cydonium, Cyon	ΠΕ. Perinthus
ΚΥΘ. Cythnus	ΠΕΛ. Pella
ΚΥΠ. Cyprus	ΠΕΡ. Pergus
ΚΥΡ. Cyrene	ΠΕΡΤ. Pertinax.
	ΠΕΣΚ. Pescennius
	Π. ΠΗ. Pelusium
	ΠΙΝ. Pinamytæ
	ΠΛΑ. Plateæ
	ΠΟ. Pontus
	ΠΟΛΤ. Polyrrenum
	ΠΟΣ. Posidonia
	ΠΡΑΣ. Præfilius
	Π. ΠΡΤ. Πρωτανος, Præfect
	ΠΡ. ΠΡΕΣ. Πρεσβευτος, Legate
	ΠΡΟ. Proconnesus
	ΠΡΟΔΙ. Προδικος, Curator
	Π. ΠΡΩΤ. Πρωτος, First
	ΠΤ. Ptolemais
	ΠΥ. Pylos
	Ρ
	ΡΟ. Rhodes
	Σ
	Σ. ΣΑ. Salamis, Samos, Syria
	ΣΑ. Samofate
	ΣΑΛΑΠ. Salapia
	ΣΑΡ. Sardis
	ΣΕ. Seriphus, Segeste
	ΣΕΒ. Σεβαστος, Augustus
	ΣΕΛ. Selinus, Seleucia
	ΣΕΠΤ. Septimius
	ΣΙ. Siphnos.
	ΣΙΔ. Side
	ΣΙΝΩ. Sinope
	Μ
	Μ. Marcus, Malea, Megalopo- lis, Mazaka
	ΜΑ. Maronea, Massilia, Mace- donia
	ΜΑΓ. Magnesia
	ΜΑΚΡΟ. Macrocephali
	ΜΑΜ. Mamertini
	ΜΑΣΣ. Massilia
	ΜΑΖ. Mazara
	ΜΕ. Menelais, on Syrian regal coins
	ΜΕΝΕΚ. Menecrates
	ΜΕ. ΜΕΓ. Megara, Megalopo- lis, Melite
	ΜΕΓ. Μεγαλος, Great
	ΜΕΣ. Messina
	ΜΕΤΑ. Metapontum
	Μ. ΜΗΤΡΟ. Metropolis
	ΜΙ. Miletus
	ΜΚ. Mazaka of Cappadocia, on coins of Mithridates VI.
	ΜΟΡ. Morgantia
	ΜΥ. Mycenæ
	ΜΥΡ. Myrlea
	ΜΥΤΙ. Mytilene
	Ν
	Ν. Naupactos
	ΝΑΞ. Naxos
	ΝΑΥΑΡΧ. Ναυαρχιδος, enjoying a sea-port
	ΝΕ. Nemea
	Ν. ΝΕΩΚ. Neocori
	ΝΕΟΠ. Neopolis.
	ΝΕΡ. Nerva
	ΝΙΚ. Nicæum, Nicomedia
	ΝΥΕ. Nysæi, on coins of Scy- thopolis, Pell.
	Ο
	ΟΙ. Oethæi
	ΟΝ. Οντος, being.
	ΟΠΕΛ. Opelius
	ΟΠ. Opus
	ΟΡΥ. Orycus
	ΟΡΧ. Orchomenus
	ΟΥΠ. or ΤΠ. Ουπατος, or Τπα- τος, Consul
	ΟΥΕΡ. Verus
	ΟΥΗ. Verus
	ΟΥΕΣΗ. Vespasianus
	ΟΥΙΤΕΑ. Vitellius
	ΟΦΡΥ. Ophryniun

Π. Παρ, Προς, upon	Π
Π. ΠΟΠΛ. Publius	Π
Π. ΠΑ. Paphos or Paros	Π
ΠΑΙΣ. Pæstum	Π
ΠΑΝ. Panormus	Π
ΠΑΡ. Paropinum	Π
ΠΑΡΙ. Paros	Π
ΠΑΡΘ. Parthicus	Π
ΠΕ. Perinthus	Π
ΠΕΛ. Pella	Π
ΠΕΡ. Pergus	Π
ΠΕΡΤ. Pertinax.	Π
ΠΕΣΚ. Pescennius	Π
Π. ΠΗ. Pelusium	Π
ΠΙΝ. Pinamytæ	Π
ΠΛΑ. Plateæ	Π
ΠΟ. Pontus	Π
ΠΟΛΤ. Polyrrenum	Π
ΠΟΣ. Posidonia	Π
ΠΡΑΣ. Præfilius	Π
Π. ΠΡΤ. Πρωτανος, Præfect	Π
ΠΡ. ΠΡΕΣ. Πρεσβευτος, Legate	Π
ΠΡΟ. Proconnesus	Π
ΠΡΟΔΙ. Προδικος, Curator	Π
Π. ΠΡΩΤ. Πρωτος, First	Π
ΠΤ. Ptolemais	Π
ΠΥ. Pylos	Π
Ρ	Ρ
ΡΟ. Rhodes	Ρ
Σ	Σ
Σ. ΣΑ. Salamis, Samos, Syria	Σ
ΣΑ. Samofate	Σ
ΣΑΛΑΠ. Salapia	Σ
ΣΑΡ. Sardis	Σ
ΣΕ. Seriphus, Segeste	Σ
ΣΕΒ. Σεβαστος, Augustus	Σ
ΣΕΛ. Selinus, Seleucia	Σ
ΣΕΠΤ. Septimius	Σ
ΣΙ. Siphnos.	Σ
ΣΙΔ. Side	Σ
ΣΙΝΩ. Sinope	Σ

ΣΜΥ. Smyrna	Abbrevia- tions.
ΣΤΡ. ΣΤΡΑ. Στρατηγος, Præ- tor	
ΣΥΒ. Sybaris	
ΣΥ. ΣΥΡΑ. Syracuse	
ΣΥΡ. Syria	
ΣΩ. Solæ.	
Τ	
Τ. Titus	
ΤΑΒΑΑ. Tabala	
ΤΑ. ΤΑΝΑ. Tanagra	
ΤΑΡ. Tarentum, Tarsus	
ΤΑΥΡ. Tauromenum	
ΤΕ. Tementis	
ΤΕΡ. Terina	
ΤΗ. Tenus	
ΤΙ. ΤΙΒ. Tiberius	
ΤΡΑ. Trallis	
ΤΡΙ. Tripolis	
ΤΡΟ. Troizene	
ΤΥΑΝ. Tyana	
ΤΥ. Tyndaris.	
ΤΥΡ. Tyre (monogram)	
Υ	
ΥΕ. ΥΕΛ. Velia	
ΥΠ. ΥΠΑΤ. Υπατος, Consul	
Φ	
Φ. Philip; Phœstus, Philun- tium	
ΦΑ. Phafelis	
ΦΑΡ. Pharfalus	
ΦΙ. Vibius, Philippopolis	
ΦΙΝΕ. Phineium	
ΦΛ. Flavius	
ΦΟΚ. Phocæum	
ΦΟΤΑ. Fulvia	
ΦΥ. Phycus in Cyrene.	
Χ	
Χ. Chios	
ΧΑΛ. Chalcis	
ΧΕΡ. Chersonesus	
ΧΙ. Chytri in Crete.	

Greek Numerals

A.	1.	I.	10.	P.	100.
B.	2.	K.	20.	Σ. or C	200.
Γ.	3.	Λ.	30.	T.	300.
Δ.	4.	Μ.	40.	Τ.	400.
Ε.	5.	Ν.	50.	Φ.	500.
ς. or ς.	6.	Ξ.	60.	Χ.	600.
Ζ.	7.	Ο.	70.	Ψ.	700.
Η.	8.	Π.	80.	Ω.	800.
Θ.	9.	Ϟ or ϙ	90.	ϙ.	900.

Examples. I is 10; add A or I, and 1A makes 11; so 1B, 12; 1Γ, 13, &c. K is 20, KA, 21, &c. 1ΠA makes 111. The Eng-
lish word AIR marks the grand initial numerals. On coins the
numerals are often placed in retrograde order; which makes no
difference in the value, as every letter is appropriated to its num-
ber. Thus TAT or TAT imply the same, 333. But this advan-
tage being unknown to the Roman numerals and Arabic ciphers,
is apt to puzzle the beginner.

Roman Coins.

A	ACT. Actiacus, or Actium.
A. AULUS: in the exergue it implies the first mint, as ANT. A. coined at An- tioch in the first mint.	AD FRV. EMV. Ad fruges emundas.
A. A. A. F. F. Auro, Argen- to, Ære, Flando, Feri- undo.	ADIAB. Adiabenicus.
A. or AN. Annus.	ADOP. Adoptatus.
A. A. Apollo-Augusti.	ADQ. Adquilita.
A. F. A. N. Auli filius, Auli nepos.	ADV. Adventus.
ABN. Abnepos.	AED. Ædes.
	AED. P. Ædilitia potestate.
	AED. S. Ædes sacra.
	AED. CVR. Ædilis Curulis.
	AED. PL. Ædilis Plebis.
	ÆEL. Ælius.

Abbrevia-
tions.Abbrevia-
tions.

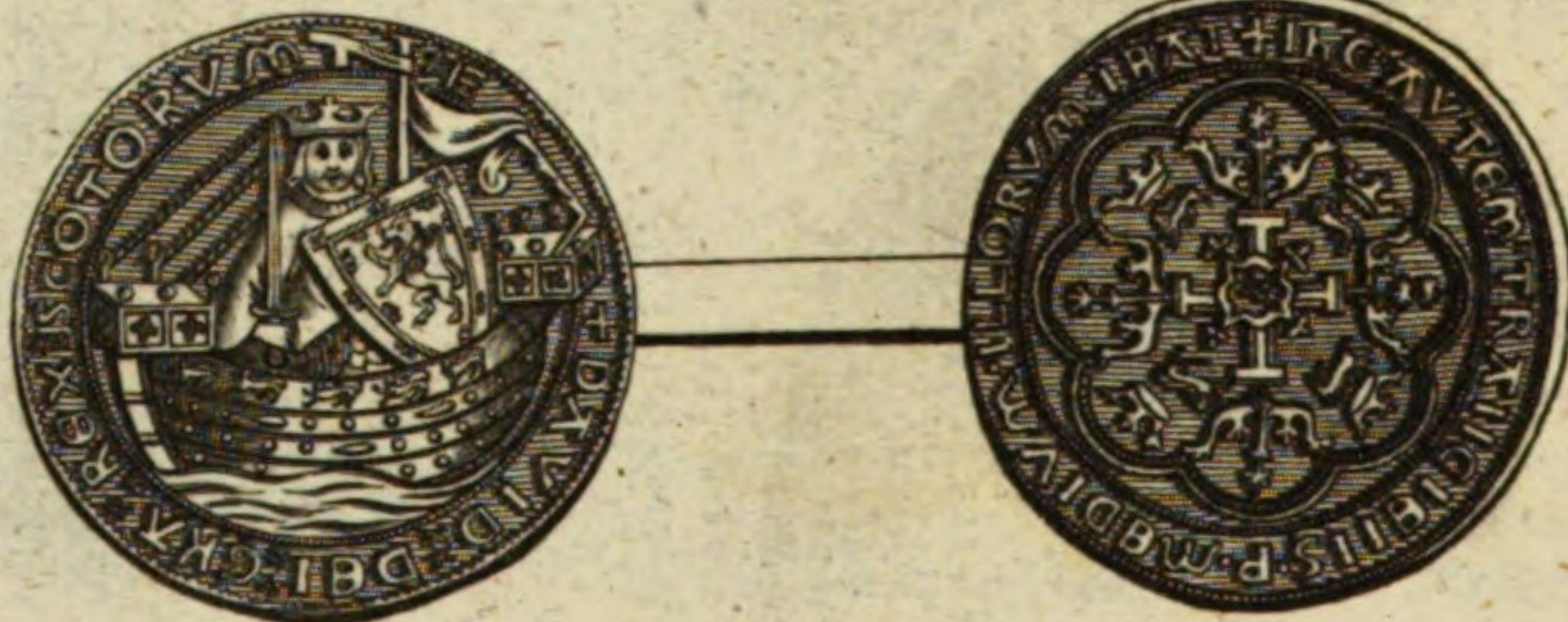
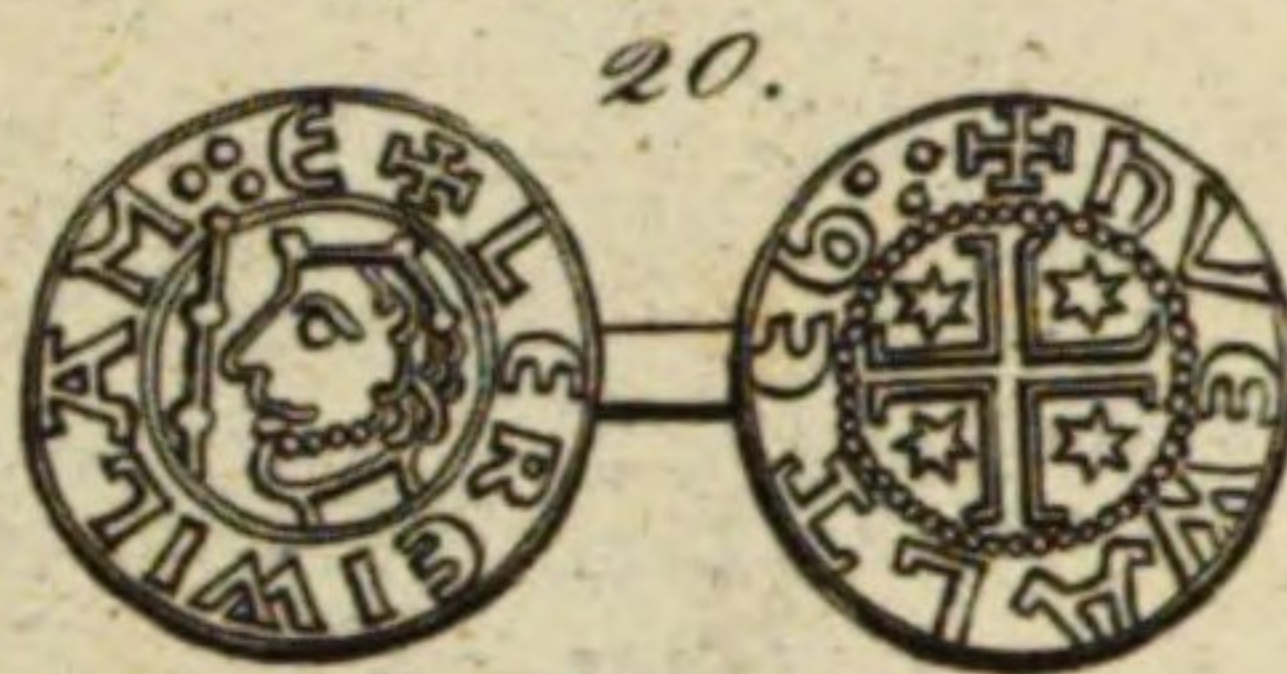
AEM. OR AIMIL. Æmilius.
AET. Æternitas.
AFR. Africa, or Africanus.
ALBIN. Albinus.
ALIM. ITAL. Alimenta Italiae.
ANN. AVG. Annona Augusti.
A. N. F. F. Annum Novum Fastum Felicem.
ANIC. Anicius.
ANN. DCCCLXIII. NAT. VRB. P. CIR. CON. Anno 864 Natali Urbis Populo Circenses constituti.
ANT. AVG. Antonius Augustur.
ANT. Antonius, or Antoninus.
AP. Appius.
A. P. F. Argento Publico Feriundo.
A POP. FRVG. AC. A Populo Fruges Acceptæ.
AQ. OR AQL. Aquilius.
AQUA MAR. Aqua Martia.
ARAB. ADQ. Arabia Adquisita.
ARR. Arrius.
AVG. Augur, Augustus, Augusta.
AVG. D. F. Augustus Divi Filius.
AVGG. Two Augusti.
AVGGG. Three Augusti.
AVR. OR AVREL. Aurelius.
B
B. The mark of the second mint in any city.
BON. EVENT. Bonus Eventus.
B. R. P. NAT. Bono Reipublicæ Nato.
BRIT. Britannicus.
BRVT. Brutus.
C
c. Caius, Colonia.
C. A. Cæsarea Augusta.
C. CAE. OR CAES. Cæsar.
CAESS. Cæsares.
CARTH. Carthage.
CEN. Censor.
CENS. P. Censor Perpetuus.
CEST. Cestius, or Cestianus.
CIR. CON. Circum Condidit, or Circenses Concessit.
CIVIB. ET SIGN. MILIT. A. PARTH. RECVP. Civibus et Signis Militaribus a Parthis Recuperatis.
CN. Cneius.
COEL. Cælius.

CON. OB. Constantinopoli Obsignata, or Constantinopoli Officina secunda, or Conflata Obryzo.
COL. Colonia.
CON. SVO. Conservatoris suo.
CONCORD. Concordia.
CL. V. Clypeus Votivus.
COMM. Commodus.
CLOD. Clodius.
CL. OR CLAVD. Claudius.
COS. Consul.
COSS. Consules.
CORN. Cornelius.
CVR. X. F. Curavit Denarium Faciendum.
D
D. Decimus, Divus, Designatus.
DAC. Dacicus.
D. F. Dacia felix.
D. M. Diis Manibus.
DES. OR DESIG. Designatus.
DICT. Dictator.
DOMIT. Domitianus.
D. N. Dominus noster.
DID. Didius.
D. P. Di Penates.
DV. Divus.
E
EID. MAR. Idus Martiæ.
EX. CONS. D. Ex Consensu Decuriorum.
EX. S. C. Ex Senatus Consulto.
EQ. ORDIN. Equestris Ordinis.
EX. A. PV. Ex Argento, or Auctoritate Publica.
EXER. Exercitus.
ETR. Etruscus.
F
F. Filius, or Filia, or Felix, or Faciendum, or Fecit.
FEL. Felix.
FELIC. Felicitas.
FL. Flavius.
FLAM. Flamen.
FORT. RED. Fortunæ Reduci.
FOVRI. Fovrius for Furius.
FONT. Fonteius.
FRVGIF. Frugiferæ (Cere-ri).
FVL. Fulvius.
FVLG. Fulgurator.
G
G. Gneius, Genius, Gaudium.
GA. Gaditanus.
G. D. Germanicus Dacicus.
GEN. Genius.
GERM. Germanicus.
GL. E. R. Gloria Exercitus Romani.

GL. P. R. Gloria Populi Romani.
GOTH. Gothicus.
G. P. R. Genio Populi Romani.
G. T. A. Genius Tutelaris Ægypti, or Africae.
H
HEL. Helvius.
HEL. Heliopolis.
HER. Herennius, or Herennia.
HO. Honos.
HS. Sestertius.
I
I. Imperator, Jovi, Julius.
IAN. CLV. Janum clusit for clausit.
IMP. Imperator.
IMPP. Imperatores.
I. S. M. R. Juno Sospita, Mater or Magna Regina.
IT. Italia, Iterum.
ITE. Iterum.
IVL. Julius or Julia.
IVST. Justus.
I. I. S. Sestertius.
I. O. M. SACR. Jovi Optimo, Maximo, Sacrum.
II. VIR. Duumvir.
III. VIR. R. P. C. Triumvir Reipublicæ Constituentæ.
IIII. VIR. A. P. F. Quatuorvir, or Quatuorviri, Auro, or Argento, or Ære, Publico Feriundo.
IVN. Junior.
L
L. Lucius.
LAT. Latinus.
LEG. PROPR. Legatus Pro-pretoris.
LEG. I. & C. Legio Prima, & C.
LEP. Lepidus.
LENT. CVR. X. F. Lentulus Curavit Denarium Faciendum.
LIBERO P. Libero Patri.
LIB. PVB. Libertas Publica.
LIC. Licinius.
L. S. DEN. Lucius Sicinius Dentatus.
LVC. Lucifera.
LVD. CIR. Ludi Circenses.
LVD. EQ. Ludi Equestris.
LVD. SAEC. F. Ludos Sæculares Fecit.
M
M. Marcus, or Marius.
MAR. CL. Marcellus Clodius.
M. F. Marci Filius.

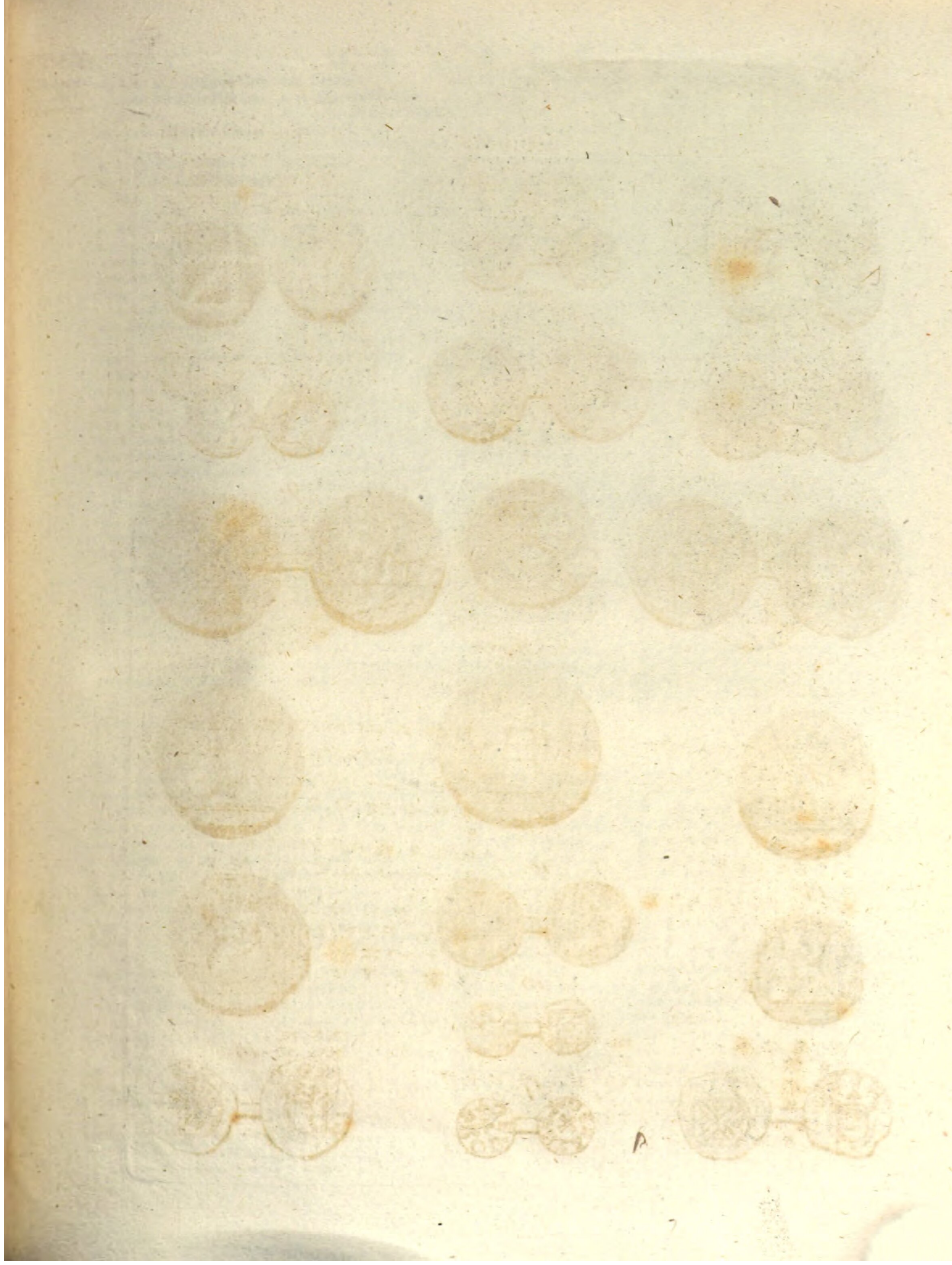
M. OTACIL. Marcia Otacilia.
MAG. OR MAGN. Magnus.
MAC. Macellum.
MAX. Maximus.
MAR. Martia (aqua).
MAR. VLT. Marti Ultori.
MES. Messius.
METAL. Metallum.
MINAT. Minatius.
MINER. Minerva.
M. M. I. V. Municipis Municipii Julii Uticensis.
MON. OR MONET. Moneta.
N
N. Nepos or Noster.
N. C. Nobilissimus Cæsar.
NAT. VRB. Natalis Urbis.
NEP. Næpos.
NEP. RED. Neptuno Reduci.
O
O. Optimo.
OB. C. S. Ob Cives Servatos.
OF. Officina.
OPEL. Opellius.
ORB. TERR. Orbis Terrarum.
P
P. OR POT. Potestate.
PAC. ORB. TER. Pacatori Orbis Terrarum.
PAPI. Papius or Papirius.
PARTH. Parthicus.
PERP. Perpetuus.
PERT. OR PERTIN. Pertinax.
PESC. Pescennius.
P. F. Pius Felix.
PLAET. Plætônus.
P. L. N. Pecunia Londini Notata.
P. LON. S. Pecunia Londini Signata.
P. M. OR PONT. MAX. Pontifex Maximus.
POMP. Pompeius.
P. P. Pater Patriæ.
PR. Prætor.
P. R. Populus Romanus.
PRAEF. CLAS. ET. OR. MARIT. Præfectus Classis et Oræ Maritimæ.
PRINC. IVVENT. Princeps Juventutis.
PRIV. Privernum.
PROC. Proconsul.
PRON. Pronepos.
PROP. Proprætor.
PROQ. Proquæstor.
PROV. DEOR. Providentia Deorum.
PVPIEN. Pupienus.
Q
Q. Quintus, or Quæstor.

Plate CCXCIII.



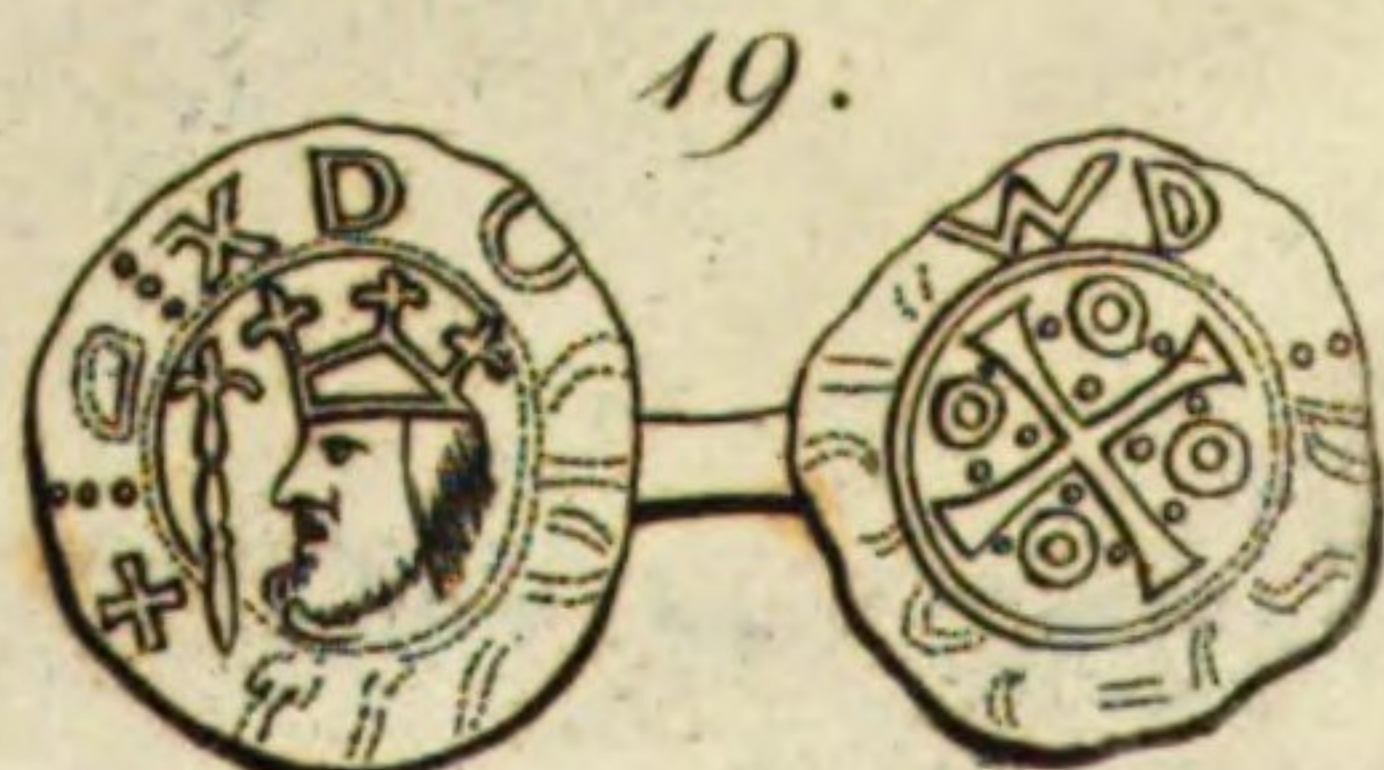
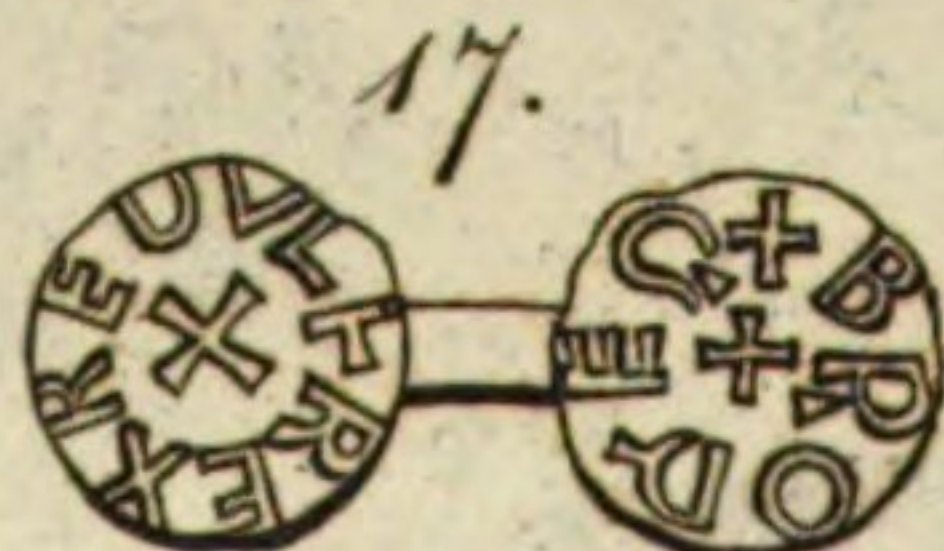
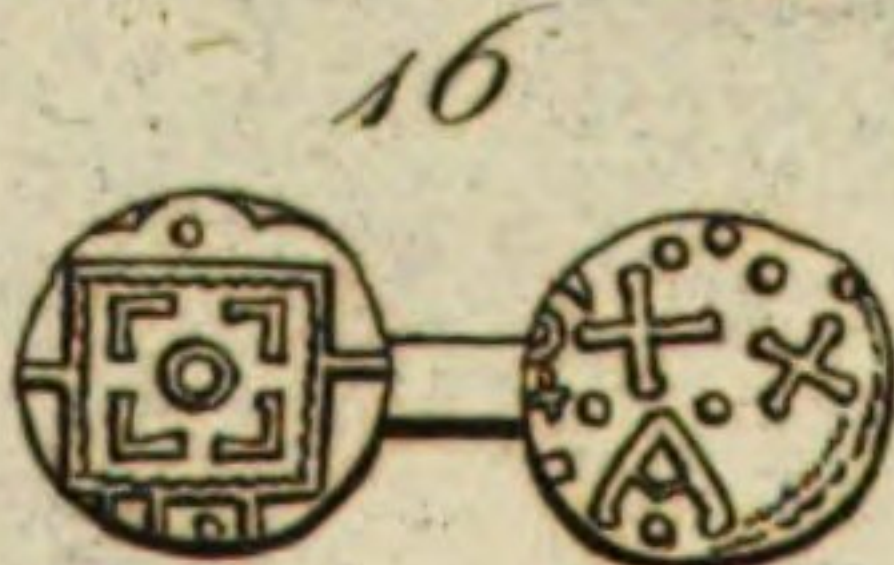
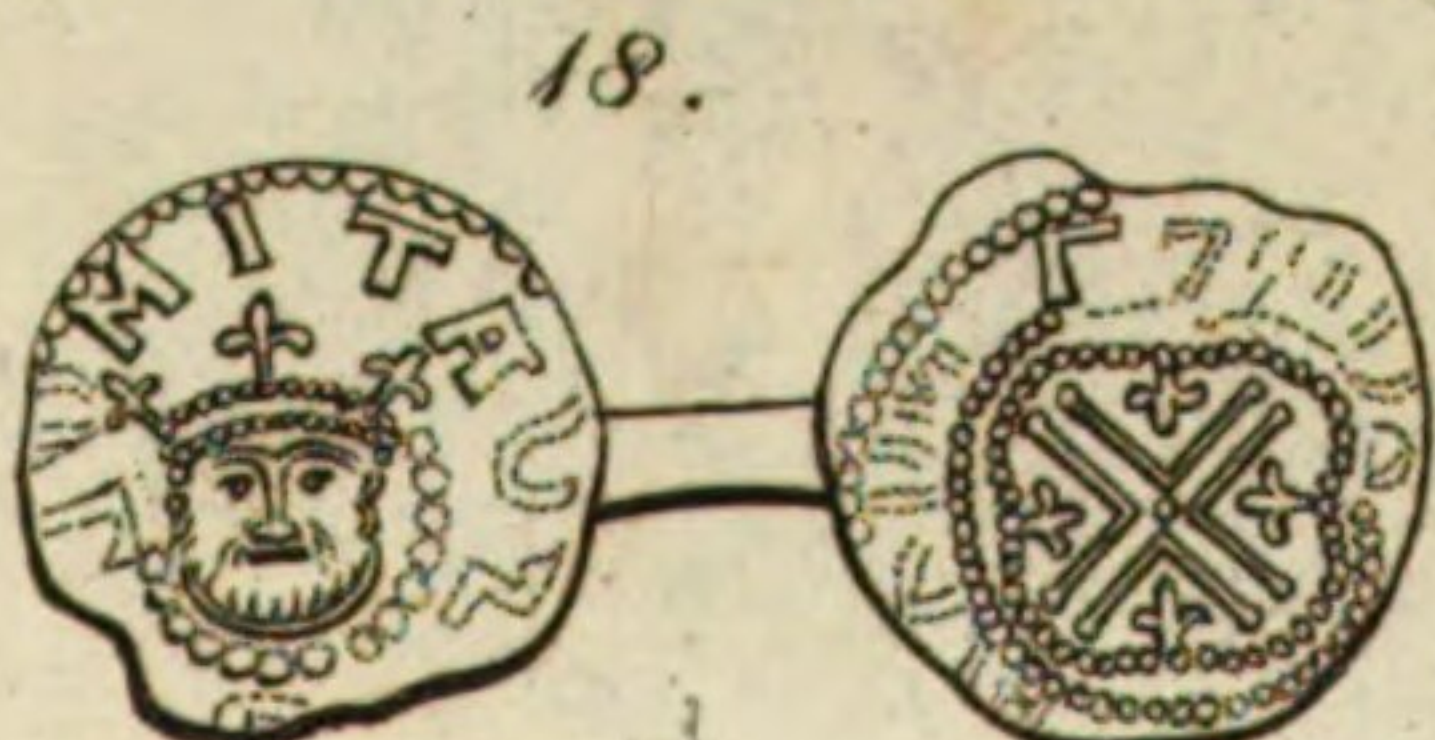
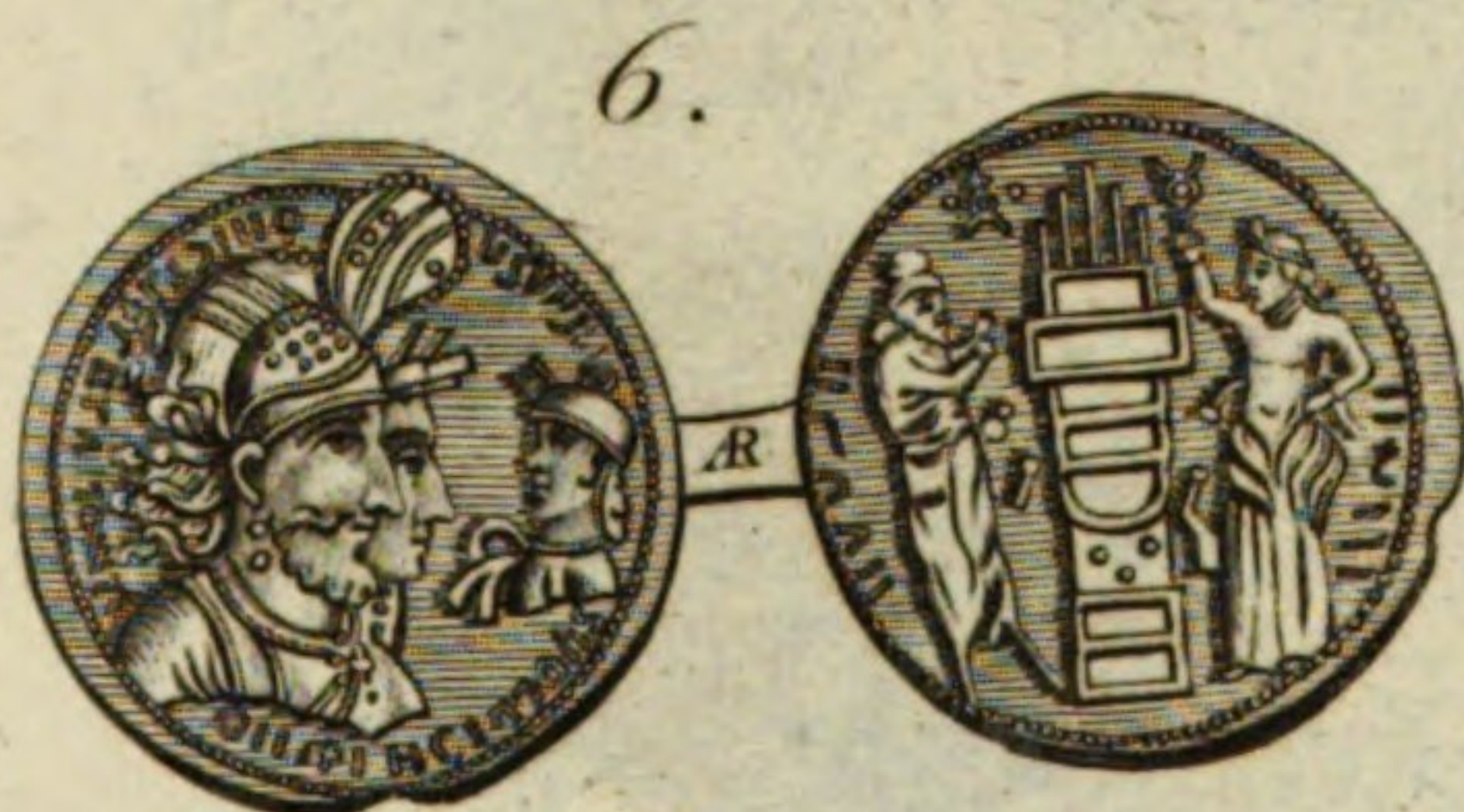
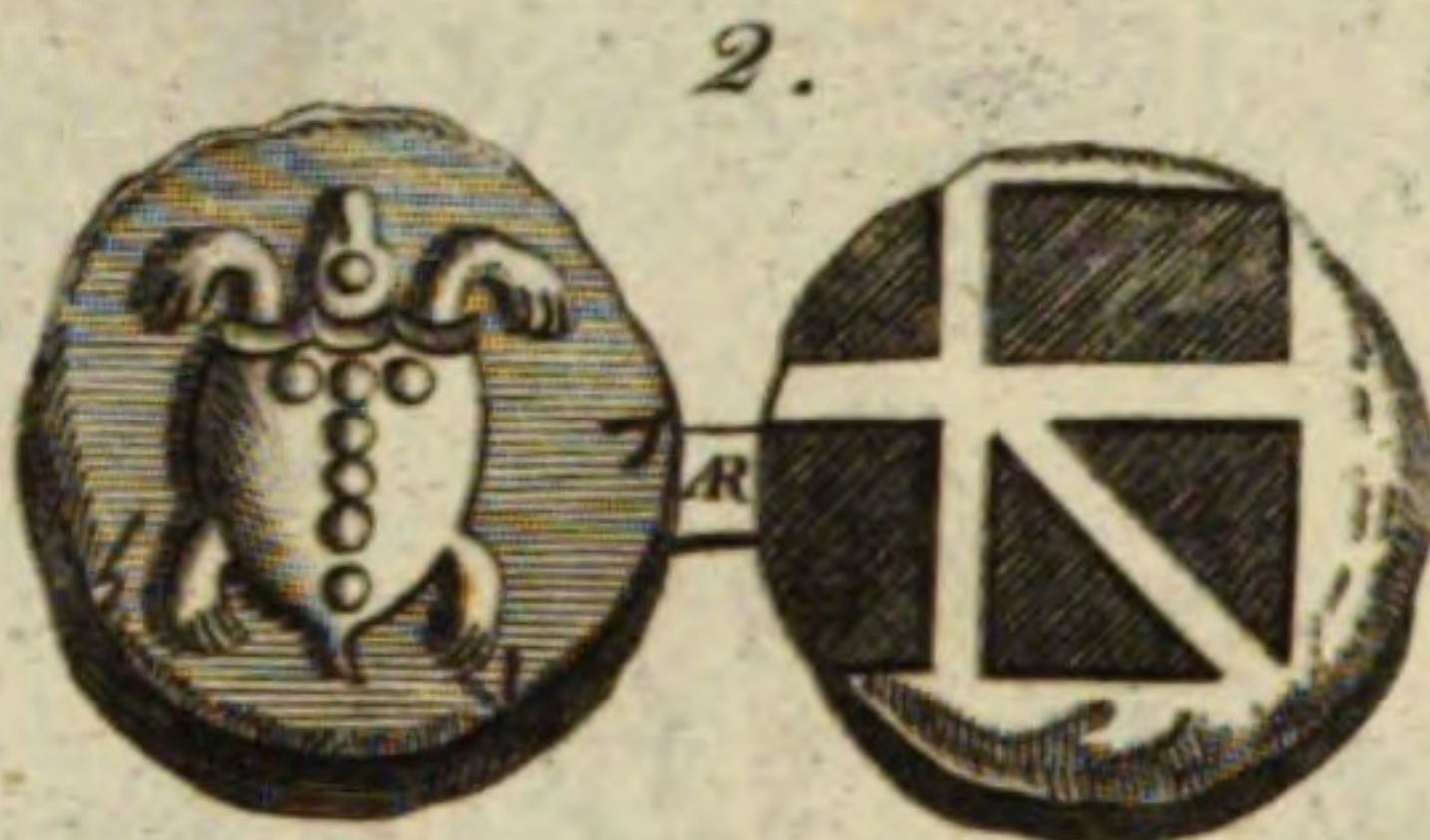
M. M. Л. H. H. P. M. SIZ. M.
H. P. H. M. H. M. H. U.
N. P. N. ~. H. ~. H. II.
O. O. O. X. O. A. +. X. O. O. O.
P.
R. R. R. B. R. R. R. R. A.
S. ~. ~. ~. S. Z. Z. E. S
T. T. T.
V. V. Y. II. U. U. Y.
W. W. P. YY. E. P. P. P. Y.
X. +. ~. =. X. K. +. X.
Y. Y. F. T. Y.

NG. N.
NW. N.
REX. R.



MEDALS.

Plate CCXCII.



Abbreviations.				Abbreviations.
Q. C. M. P. I. Quintus Cæcilius Metellus Pius Imperator.	SIG. Signis.	M. K. V. T. Moneta Kartaginensis Urbis (in officina) Tertia.	ROPS. Romæ Pecunia Signata.	
Q. DESIG. Quæstor Designatus.	S. M. Signata Moneta.	M. L. Moneta Lugdunensis vel Londinensis.	S. AR. Signata Arelate.	
Q. P. Quæstor Prætorius.	S. P. Q. R. Senatus Populusque Romanus.	MOSTT. Moneta Officinæ Secundæ Treverorum.	S. CONST. Signata Constantinopoli.	
Q. PR. Quæstor Provincialis.	STABIL. Stabilita (terra).	MSTR. Moneta Signata Treveris.	SIS. Siscia.	
R	SVL. Sulla.	σ. Officina.	SS. P. Siscienfis Pecunia.	
R. Roma, Restituit.	T	OFF. III. CONST. Officina Tertia Constantinopoli.	SISC. V. Siscia Urbs.	
RECEP. Receptis, or Receptus.	T. Titus, Tribunus.	PARL. Percussa or Pecunia Arelate.	SMA. Signata Moneta Antiochiæ.	
REST. Restituit.	TER. Terentius, or Tertium.	PLON. Pecunia Londinensis.	S. M. HER. Signata Moneta Heracleæ.	
ROM. ET AVG. Romæ et Augusto.	TEMP. Temporum.	PLVG. Pecunia Lugdunensis.	S. M. N. Signata Moneta Nicomediæ.	
R. P. Respublica.	TI. Tiberius.	P. R. Pecunia Romana, or Percussa Romæ.	S. M. R. Signata Moneta Romæ.	
S	TR. OF TREV. Treveris.	P. T. Pecunia Treverensis.	S. T. Signata Treveris.	
SAEC. AVR. Sæculum Aureum.	TREB. Trebonianus.	Q. AR. Quinta Arelatenfis (officina).	TESOB. Tessalonica Officina Secunda.	
SAEC. FEL. Sæculi Felicitas.	TR. MIL. Tribunus Militaris.	R. RO. ROM. Romæ.	THEOPO. Theopoli.	
SAL. Salus.	TR. P. OF TRIB. POT. Tribunicia Potestate.	RA. Ravennæ.	TR. Treveris.	
SALL. Sallustia.	V		TROB. Treveris Officina Secunda.	
SARM. Sarmaticus.	V. Quintum.			
S. C. Senatus Consulto.	V. C. Vir Clarissimus.			
SCIP. ASIA. Scipio Asiaticus.	VESP. Vespasianus.			
SEC. ORB. Securitas Orbis	VIB. Vibius.			
SEC. PERP. Securitas Perpetua.	VICT. Victoria.			
SEC. TEMP. Securitas Temporum.	VII. VIR. EPVL. Septemvir Epulonum.			
SEN. Senior.	VIL. PVB. Villa Publica.			
SEPT. Septimius.	VIRT. Virtus.			
SER. Servius.	VN. MR. Venerandæ Memorix.			
SEV. Severus.	VOT. X. MVLT. XX. Votis Decennalibus Multiplicatis Vicennialibus.			
SEX. Sextus.	X			
SIC. V. SIC X. Sicut Quinquennalia, sic Decennalia.	X. Decem, Denarius.			
	XV. VIR. SACR. FAC. Quindecim Vir Sacris Faciundis.			
<i>Abbreviations on the Exergue; from Banduri and Monaldini. Pinkerton.</i>				
A. Officina Prima.	C. Θ. Constantinopoli No-	Abdera in Spain.	Damascus in Celestria.	
ALE. Alexandria.	na.	Acci in Spain.	Dertosa in Spain.	
AMB. Antiochenfis Moneta Secundæ Officinæ.	COMOB. Conflata Moneta Obryzo. Only on gold or silver from a gold dye.	Achulla in Africa.	Deulton in Thrace.	
AN. ANT. ANTI. Antiochia.	CON. Constantinopoli.	Ælia Capitolina in Judæa.	Dium in Macedon.	
ANB. Antiochiæ Secunda Officina: to ANH. Antiochiæ Octava Officina.	CONOB. Conflata Obryzo. Only on gold.	Agrippina in Germany.	Ebora in Spain.	
A. P. L. (In officina) Prima percussa Lugduni.	CONS. Constantinopoli.	Antiochia in Pisidia.	Edeffa in Mesopotamia.	
AQ. AQL. Aquileiæ.	KART. Carthago.	in Syria.	Emerita in Spain.	
AQ. O. B. F. Aquileiæ Officinæ Secundæ Fabrica.	K. O. Carthaginensis Officina.	Apamea in Bithynia.	Emesa in Phœnicia.	
AQ. P. S. Aquileiæ Pecunia Signata.	L. LC. LVC. LVG. Lucduni, Lugduni.	Arna in Thessaly.	Ergavica in Spain.	
AQ. S. Aquileiæ Signata.	L. LON. Londini.	Astigi in Spain.	Germe in Galatia.	
A. AR. ARL. Arelate.	L. P. Lugdunensis vel Londinensis Pecunia.	Babba in Mauritania Tingitana.	Graccuris in Spain.	
A. SISC. Prima (in officina) Siscia.	LVC. P. S. Lugduni Pecunia Signata.	Berytus in Phœnicia.	Hadrumetum in Africa.	
B. SIRM. Secunda Sirmii.	MDPS. Mediolani Pecunia Signata.	Bilbilis in Spain.	Heliopolis in Celestria.	
B. S. L. C. Secunda Signata Lugduni.		Bostra in Arabia.	Hippo Regius in Africa.	
		Bracara Augusta in Spain.	Iconium in Lycaonia.	
		Buthrotum in Epirus.	Ilerda in Spain.	
		Cabellio in Gaul.	Illergavonia in Spain.	
		Cæsar-Augusta in Spain.	Illeci in Spain.	
		Cæsarea in Palestine.	Iol in Mauritania.	
		Calagurris in Spain.	Italica in Spain.	
		Calpe in Spain.	Laelia in Spain.	
		Camalodunum in Britain.	Laodicea in Syria.	
		Carrhæ in Mesopotamia.	Leptis in Africa.	
		Carteia in Spain.	Lugdunum in Gaul.	
		Carthago in Africa.	Neapolis in Palestine.	
		Carthago Nova in Spain.	Nemausus in Gaul.	
		Cascantum in Spain.	Nesibis in Mesopotamia.	
		Cassandria in Macedon.	Norba Cæsarea in Mauritania.	
		Celsa in Spain.	Obulco in Spain.	
		Clunia in Spain.	Oea in Africa.	
		Coillu in Numidia.	Olba in Pamphylia.	
		Comana in Cappadocia.	Osca in Spain.	
		Corinthus in Greece.	Oficarda in Spain.	
		Cremna in Pisidia.	Panormus in Sicily.	
		Culla in Thrace.	Parium in Mysia.	

Abbrevia-
tions.

Parlais in Lycaonia.
Patricia (Corduba) in Spain.
Pella in Macedon.
Philippi in Macedon.
Philippopolis in Arabia.
Ptolemais in Phœnicia.
Ruscino in Gaul.
Romula (Hispalis) in Spain.
Rhesæna in Mesopotamia.
Sabaria in Hungary.
Saguntum in Spain.
Sebaste in Palestine.
Segobriga in Spain.

Sidon in Phœnicia.
Singara in Mesopotamia.
Sinope in Pontus.
Stobi in Macedon.
Tarraco in Spain.
Theffalonica in Macedon.
Traducta (Julia) in Spain.
Troas in Phrygia.
Turiaso in Spain.
Tyana in Cappadocia.
Tyrus in Phœnicia.
Valentia in Spain.
Vienna in Gaul.
Viminacium in Mœsia.
Utica in Africa.

Antiqua, or Corinth, or Carthago Nova.
C. I. CAL. Colonia Julia Calpe, *Gibraltar*.
C. I. F. Colonia Julia Felix, *Cadiz*.
C. I. G. A. Colonia Julia Gemella (c) Augusta.
C. I. I. A. Colonia Immunis Illice Augusta, *Elche in Spain*.
C. I. N. C. Colonia Julia Norba Cæfareana, or Alcantara: sometimes it means Col. Julia Nova Carthago.
C. I. V. Colonia Julia Valentia, *Valencia in Spain*.
C. V. T. Colonia Victrix Tarraco.
C. L. I. COR. Colonia Laus Julia Corinthus.
C. L. I. N. AVG. Colonia Laus Julia Nova Augusta, *Laus or Lodi in Lucania*.
C. M. L. Colonia Metropolis Laodicea, *in Cælesyria*.
CO. DAM. METRO. Colonia Damascus Metropolis.
COHH. PRET. VII. P. VI. F. Cohortes Prætorianæ Septimum Piæ, Sextum Felices.
COH. I. CR. Cohors prima Cretensis.
COH. PRET. PHIL. Cohors Prætoriana Philippensium.
COL. AEL. A. H. MET. Colonia Ælia Augusta Hadrumetina Metropolis, *in Africa*.
COL. AEL. CAP. COMM. P. F. Colonia Ælia Capitolina Commodiana Pia Felix.
COL. ALEX. TROAS. Colonia Alexandriana Troas.
COL. AMAS. or AMS. Colonia Amastriana, *in Paphlagonia*.
COL. ANT. *Antioch in Pisidia*.
COL. ARELAT. SEXTAN. Colonia Arelate Sextanorum, *Arles*.
COL. AST. AVG. Colonia Astigitana Augusta, *Eceja in Spain*.
COL. AVG. FEL. BER. Colonia Augusta Felix Berytus.
COL. AVG. FIR. Colonia Aug. firma, *Eceja*.
COL. AVG. IVL. PHILIP. Colonia Augusta Julia Philippensis.
COL. AVG. PAT. TREVIR. Colonia Augusta Paterna Trevirorum, *Treves in Germany, sent from Paternum in Italy*.
COL. AVR. KAR. COMM. P. F. Colonia Aurelia Karrhæ Commodiana Pia Felix, or Carneatum Commagene, or *Carrhæ in Asia*.
COL. B. A. Colonia Braccara Augusta, *Brague*.
COL. BRYT. L. V. Colonia Berytus Legio Quinta.
COL. CABE. Colonia Cabellio.
COL. CAES. AVG. Colonia Cæfareia Augusta, *in Palestine*.
COL. CAMALODVN. Colonia Camalodunum, *England*.
COL. CASILIN. Colonia Casilinum, *Castellazo in Italy*.
COL. CL. PTOL. Colonia Claudia Ptolemais, *Acre in Phœnicia*.
COL. DAMAS. METRO. Colonia Damascus Metropolis.
COL. F. I. A. P. BARCIN. Colonia Flavia Julia Augusta Pia, *Barcino or Barcelona*.
COL. FL. PAC. DEVL. Colonia Flavia Pacensis Develtum, *Develtum in Thrace*.
COL. HA. ME. T. Colonia Hadriana Mercurialis Thænitana, Mercuriali, *Fermo in Italy, and Thenes in Africa*.
COL. H. (or HEL.) LEG. H. Colonia Heliopolis Legio Heliopolitana.
COL. HEL. I. O. M. H. Colonia Heliopolis Jovi Optimo Maximo Heliopolitano.
COL. IVL. AVG. C. I. F. COMAN. Colonia Julia Augusta Concordia Invieta Felix Comanorum, *drawn from Con-*

Abbrevia-
tions.

Abbreviations on Colonial Coins.

ACCI. Accitana Colonia, *Guadix in Spain*.
ADI. Adjutrix legio.
AEL. MVN. COEL. Ælium Municipium Cœla, *near Sestos on the Hellespont*.
AST. Astigitana, *Eceja in Andalusia*.
B. A. Braccara Augusti, *Brague in Portugal*.
C. A. Cæfaria Antiochiæ.
C. A. A. P. or PATR. Colonia Augusta Aroe Patrensis.
CAB. Cabellio.
C. A. BVT. Colonia Augusti Buthrotum, *in Epirus*.
C. A. C. Colonia Augusta Cæfareia.
C. A. I. Colonia Augusta Julia, *Cadiz*.
C. A. E. Colonia Aug. Emerita, *Merida*.
CAL. Calagurris, *Calaborra in Spain*.
C. A. O. A. F. Colonia Antoniana Oea Aug. Felix, *Tripoli in Africa*.
C. A. PI. MET. SID. Colonia Amelia Pia. Metropolis Sidon.
C. A. R. Colonia Augusta Rauracorum, or Colonia Alta Regia: Augst in Switzerland, or Ast near Xeres de la Frontera in Spain.
C. C. A. Colonia Cæfareia Augusta, *Saragossa in Spain*.
C. C. COL. LUG. Claudia Copia Colonia Lugdunensis.
C. C. I. B. Colonia Campestris Julia Babba, *in Mauritania*.
C. C. I. B. D. D. Colonia Campestris Julia Babba, Decreto Decurionum.
C. C. I. H. P. A. Colonia Concordia Julia, Hadrumetina, Pia Augusta.
C. CIV. D. D. P. Corona Civica data Decreto Publico.
C. C. N. A. Colonia Carthago Nova Augusta.
C. C. N. C. D. D. Colonia Concordia, Norba Cæfareana, Decreto Decurionum.
C. COR. Colonia Corinthus.
C. C. T. Ducentesima Remissa.
C. C. S. Colonia Claudia Sabaria, *in Hungary*.
C. F. P. D. Colonia Flavia Pacensis Develtum, *Develtum in Thrace*.
C. G. I. H. P. A. Colonia Gemella Julia Hadriana, Pariana, Augusta.
C. I. C. A. Colonia Julia Concordia, Apamea.
C. I. A. D. Colonia Julia Augusta Dertona, *Tortona near Milan*.
C. I. AV. Colonia Julia Aug. *Cadiz*.
C. I. AVG. F. SIN. Colonia Julia Augusta Felix Sinope.
C. I. B. Colonia Julia Balba, *in Mauritania*.
C. I. C. A. P. A. Colonia Julia Carthago Augusta Pi

(c) Gemella implies a colony drawn from two others.

Abbrevia-
tions.Explana-
tion of
Plates.

Concordia in Italy, and sent to Comana in Cappadocia.
COL. IVL. AVG. FEL. CREMNA. Colonia Julia Augusta
Felix Cremna, in Pamphylia.

COL. IVL. CER. SAC. AVG. FEL. CAP. OECVM. ISE. HEL. Co-
lonia Julia Certamen Sacrum Augustum Felix Ca-
pitolinum Oecumenicum Iselasticum Heliopolitanum.

COL. IVL. CONC. APAM. AVG. D. D. Colonia Julia Con-
cordia Apamea Augusta Decreto Decurionum.

COL. IVL. PATER. NAR. Colonia Julia Paterna Narbo-
nensis.

COL. NEM. Colonia Nemausus.

COL. NICEPH. COND. Colonia Nicephorium Condita, in
Mesopotamia.

COL. PATR. Colonia Patrensis or Patricia, Patras in
Greece, or Cordova in Spain.

COL. P. F. AVG. F. CAES. MET. Colonia Prima Flavia
Aug. Felix Cæsarea Metropolis, in Palestine.

COL. P. FL. AVG. CAES. METROP. P. S. P. *same as above,*
P. S. P. is Provinciae Syriae Palestinæ.

COL. PR. F. A. CAESAR. Colonia Prima Flavia Augusta
Cæsarea, in Palestine.

COL. R. F. AVG. FL. C. METROP. Colonia Romana Felix
Aug. Flavia Cæsarea Metropolis *The same.*

COL. ROM. Colonia Romulea, or Seville.

COL. ROM. LVG. Colonia Romana Lugdunum.

COL. RVS. LEG. VI. Colonia Ruscino Legio Sexta, *Rous-*
illon in France.

COL. SABAR. Colonia Saburiæ.

COL. SABAS. Sebaste in Palestine.

COL. SER. G. NEAPOL. Colonia Servii Galbæ Neapolis,
in Palestine.

COL. V. I. CELSA, or COL. VIC. IVL. CELSA. Colonia Vic-
trix Julia Celsa, *Kelsa in Spain.*

COL. VIC. IVL. LEP. Colonia Victrix Julia Leptis, in
Africa.

COL. VIM. AN. I. or II, &c. Colonia Viminacium Anno
primo, *Widin in Servia.*

COL. VLP. TRA. Colonia Ulpia Trajana: *Kellen, or*
Warhal in Transilvania.

CO. P. F. COE. METRO. Colonia Prima Flavia Cæsarea
Metropolis.

CO. P. I. A. Colonia Pacensis Julia Augusta, or Col.
Octaviana.

C. R. I. F. S. Colonia Romana Julia Felix Sinope.

C. T. T. Colonia Togata Tarraco.

C. V. IL. Colonia Victrix Illice, *Elche in Spain.*

D. Decuriones.

D. C. A. Divus Cæs. Aug.

DETR. Dertosa.

GEN. COL. NER. PATR. Genio Coloniae Neronianæ Pa-
trensis.

G. L. S. Genio Loci Sacrum.

M. H. ILLERGAVONIA DYRT. Municipium Hibera Iller-
gavonia Dertosa, *Tortosa in Catalonia.*

M. M. I. V. Municipis Municipii Julii Uticensis.

M. R. Municipium Ravennatium.

MVN. CAL. IVL. Municipium Calagurris Julia, in Spain.

MVN. CLVN. Municipium Clunia, *Crunna in Spain.*

MVN. FANE. ÆL. Municipium Fanestre Aelium. *Fano.*

MVN. STOB. Municipium Stobense, *Sobi in Macedon.*

MV. TV. Municipium Turiaso, in Spain.

N. TR. ALEXANDRIANAE COL. BOSTR. Nerviae Trojanæ
Alexandrianæ Coloniae Bostre, in Palestine.

SEP. COL. LAVD. Septimia Colonia Laudicea, or Lao-
dicea.

SEP. TYR. MET. Septima Tyrus Metropolis.

Explanation of the Plates.

- Fig. 1. A Persian Daric.
2. A drachm of Egina.
3. A silver hemidrachm of Alexander the Great.
4. Tigranes the younger of Armenia, with his
sister.
5. One of the coins of the Arsacidæ of Parthia.
6. A coin of the Sassanidæ of Persia. First pub-
lished by Mr Pinkerton.
7. Denarius of Cneius Pompey from Mr Pinker-
ton, reverse. Received by Spain.
8. A brass coin of Cunobelinus.
9. Pescennius Niger. Struck at Antioch; u-
nique. In Dr Hunter's cabinet; published by Mr
Pinkerton.
10. A silver coin of Carausius.
11. Reverse of Claudius in first brass.
12. Reverse of Adrian.
13. Of Antoninus Pius.
14. Of Commodus.
15. Of Severus.
16. A Saxon penny.
17. A Saxon styca.
18. 19. Ancient pennies, supposed to be Scottish.
20. A penny of William of Scotland.
21. A penny of Robert the Great.
22. An Irish penny.
23. The gold penny of Henry III.
24. The large noble of the first coinage of Ed-
ward III.
25. The gold medal of David II. of Scotland.
26. The ryal of Queen Mary of Scotland.
27. Letters on Anglo-Saxon coins.
28. Abbreviations on ditto.
29. Monetarius.

Plates
CCXCII.
and
CCXCIII.

M E D

Medallion.

Impressions of MEDALS. See CASTING.

MEDALLION, or MEDALION, a medal of an ex-
traordinary size, supposed to be anciently struck by
the emperors for their friends, and for foreign princes
and ambassadors. But, that the smallness of their num-
ber might not endanger the loss of the devices they
bore, the Romans generally took care to stamp the
subject of them upon their ordinary coins.

Medallions, in respect of the other coins, were the
same as modern medals in respect of modern money:
they were exempted from all commerce, and had no

M E D

other value than what was set upon them by the fancy
of the owner. Medallions are so scarce, that there
cannot be any set made of them, even though the me-
tals and sizes should be mixed promiscuously.

MEDE (Joseph), a very learned English divine of
the 17th century, was educated at Cambridge, and
soon distinguished himself to great advantage; for by
the time he had taken the degree of master of arts in
1610, he had made an uncommon progress in all aca-
demical studies. His first appearance as a writer was
by an address to Dr Andrews, then bishop of Ely, in

Mede.

Mede.

a Latin tract *De Sanitate Relativa*, which was highly approved of by that prelate, who desired him to be his domestic chaplain. This Mr Mede very civilly refused; valuing the liberty of his studies above any hopes of preferment, and esteeming that freedom which he enjoyed in his cell, so he used to call it, as the haven of all his wishes. And indeed these thoughts had possessed him betimes; for when he was a school-boy, he was sent to by his uncle, Mr Richard Mede, a merchant, who, being then without children, offered to adopt him for his son if he would live with him: but he refused the offer, preferring, as it should seem, a life of study to a life of gain.

He was not chosen fellow of his college till after he was master of arts, and then not without the assistance of his friend bishop Andrews: for he had been passed over at several elections, on account of a causeless suspicion which Dr Cary, then master of the college, afterwards bishop of Exeter, had conceived of him, that "he looked too much towards Geneva." Being made fellow, he became an eminent and faithful tutor. After he had well grounded his pupils in humanity, logic, and philosophy, so that they were able to walk as it were alone, he used to set every one his daily task; which he rather chose, than to confine himself and them to precise hours for lectures. In the evening they all came to his chamber; and the first question he put to each was, *Quid dubitas?* "What doubts have you met with in your studies to-day?" For he supposed, that to doubt nothing and to understand nothing was just the same thing. This was right, and the best method to make young men exercise their rational powers, and not acquiesce in what they learn mechanically, and by rote, with an indolence of spirit which prepares them to receive and swallow implicitly whatever is offered to them. As to himself, he was so entirely devoted to the study of all excellent knowledge, that he made even the time he spent in his amusements serviceable to his purpose. He allowed himself little no exercise but walking; and often, in the fields or college garden, would take occasion to speak of the beauty, signatures, virtues, or properties of the plants then in view. for he was a curious florist, an accurate herbalist, and thoroughly versed in the book of nature. The chief delight he took in company was to discourse with learned friends.

Mr Mede was a curious inquirer into the most abstruse parts of learning, and endeavoured after the knowledge of those things which were most remote from the vulgar track. Among other things, he spent no small pains and time in sounding the depths of astrology, and blotted much paper in calculating the nativities of his near relations and fellow-students: but this was in his younger years, and he afterwards discovered the vanity and weakness of this fanciful art. He applied himself to the more useful study of history and antiquities; particularly to those mysterious sciences which made the ancient Chaldeans, Egyptians, and other nations, so famous; tracing them as far as he could have any light to guide him in their oriental schemes and figurative expressions, as likewise in their hieroglyphics, not forgetting to inquire also into the oneirocritics of the ancients: which he did the rather, because of that affinity he conceived they might have

N^o 202.

7

with the language of the prophets. He was a curious and laborious searcher of antiquities relating to religion, ethnic, Jewish, Christian, and Mahometan: to which he added other attendants, necessary for understanding the more difficult parts of Scripture.

In 1620, he refused the provostship of Trinity-college, Dublin, into which he had been elected at the recommendation of archbishop Usher, who was his particular friend; as he did also when it was offered to him a second time, in 1630. The height of his ambition was, only to have had some small donative sinecure added to his fellowship, or to have been thrown into some place of quiet; where, retired from the noise and tumults of the world, and possessed of a competency of fortune, he might have been entirely at leisure for study and acts of piety. In the mean time, although his circumstances were scanty, for he had nothing but his fellowship and a college lecture, his charity was diffusive and uncommon; and, strange as it may now seem, he devoted the tenth of his income to pious and charitable uses. But his frugality and temperance always afforded him plenty. His prudence or moderation, either in declaring or defending his private opinions, was very remarkable; as was also his freedom from partiality, prejudice or prepossession, pride, anger, selfishness, flattery, and ambition. He was meek, patient, equally remote from superstition and licentiousness of thinking; and, in short, possessed every virtue. This great and good man died in 1638, in his 52d year, having spent above two-thirds of his time in college.

MEDEA, in fabulous history, a celebrated sorceress, daughter of Æetes king of Colchis. Her mother's name, according to the more received opinion of Hesiod and Hyginus, was Idyia, or, according to others, Ephyre, Hecate, Asterodia, Antiope, and Neæra. She was the niece of Circe. When Jason came to Colchis in quest of the golden fleece, Medea became enamoured of him, and it was to her well-directed labours that the Argonauts owed their preservation. Medea had an interview with her lover in the temple of Hecate; where they bound themselves by the most solemn oaths to eternal fidelity. No sooner had Jason overcome all the difficulties which Æetes had placed in his way, than Medea embarked with the conquerors for Greece. To stop the pursuit of her father, she tore to pieces her brother Absyrtus, and left his mangled limbs in the way through which Æetes was to pass. This act of barbarity, some have attributed to Jason, and not to her. When Jason reached Iolchos his native country, the return and victories of the Argonauts were celebrated with universal rejoicings; but Æeson the father of Jason was unable to assist at the solemnity on account of the infirmities of his age. Medea, at her husband's request, removed the weakness of Æeson; and by drawing away the blood from his veins, and filling them again with the juice of certain herbs, she restored him to the vigour and sprightliness of youth. This sudden change in Æeson astonished the inhabitants of Iolchos; and the daughters of Pelias were also desirous to see their father restored by the same power to the vigour of youth. Medea, willing to revenge the injuries which her husband's family had suffered from Pelias, increased their curiosity; and betrayed them into the murder of their father

Medea.

Medea
||
Media.

Media.

ther as preparatory to his rejuvenescence, which she afterwards refused to accomplish. This action greatly irritated the people of Iolchos; and Medea with her husband fled to Corinth to avoid their resentment. Here they lived for 10 years with mutual attachment, when the love of Jason for Glauce the king's daughter interrupted their harmony, and Medea was divorced. Medea revenged the infidelity of Jason, by causing the death of Glauce, and the destruction of her family. She also killed two of her children in their father's presence; and when Jason attempted to punish the barbarity of the mother, she fled through the air upon a chariot drawn by winged dragons. From Corinth Medea came to Athens, where, after she had undergone the necessary purification of her murder, she married king Ægeus, or (according to others) lived in an adulterous manner with him. From her conduct with Ægeus, Medea had a son who was called *Medus*. Soon after, when Theseus wished to make himself known to his father, Medea, jealous of his fame and fearful of his power, attempted to poison him at a feast which had been prepared for his entertainment. Her attempts, however, failed of success, and the sight of the sword which Theseus wore by his side convinced Ægeus that the stranger against whose life he had so basely conspired was his own son. The father and the son were reconciled; and Medea, to avoid the punishment which her wickedness deserved, mounted her fiery chariot and disappeared through the air. She came to Colchis; where, according to some, she was reconciled to Jason, who had sought her in her native country after her sudden departure from Corinth. She died at Colchis, as Justin mentions, when she had been restored to the confidence of her family. After death she married Achilles in the Elysian fields, according to the traditions mentioned by Simonides. The murder of Mermerus and Pheres, the youngest of Jason's children by Medea, is not to be attributed to the mother, according to Elian; but to the Corinthians, who assassinated them in the temple of Juno Acræa. To avoid the resentment of the gods, and to deliver themselves from the pestilence which visited their country after so horrid a massacre, they engaged the poet Euripides for five talents to write a tragedy, which cleared them of the murder, and represented Medea as the cruel assassin of her own children. And besides, that this opinion might be the better credited, festivals were appointed, in which the mother was represented with all the barbarity of a fury murdering her own sons.

MEDEOLA, CLIMBING AFRICAN ASPARAGUS, in botany: A genus of the hexandria order, belonging to the trigynia class of plants; and in the natural method ranking under the 11th order, *Sarmentaceæ*. There is no calyx; the corolla is sexpartite and revolute; the berry trispermous. Its characters are these: The flower has no empalement; it has six oblong oval petals, and six awl-shaped stamina terminated by incumbent summits; and three horned germina terminating the style; the germina afterward turn to a roundish trifid berry with three cells, each containing one heart-shaped seed. There are two species.

MEDIA, now the province of GHILAN in Persia, once the seat of a potent empire, was bounded, according to Ptolemy, on the north by part of the Caspian Sea; on the south by Persis, Susiana, and Assyria; on the east by Parthia and Hyrcania; and on the west by Armenia Major. It was anciently divided into several provinces, viz. Tropatene, Charomithrene, Darites, Marciane, Amariace, and Syro-Media. By a later division, however, all these were reduced to two; the one called *Media Magna*, the other *Media Atropatia*, or simply *Atropatene*. Media Magna was bounded by Persis, Parthia, Hyrcania, the Hyrcanian Sea, and Atropatene, and contained the cities of Ecbatan, Laodicea, Apamea, Raga, Rageia or Ragea, &c. Atropatene lay between the Caspian mountains and the Caspian Sea.

This country originally took its name from Madai, the third son of Japhet; as is plain from Scripture, where the Medes are constantly called *Madai*. Among profane authors, some derive the name *Media*, from one Medus the son of Jason and Medea; others from a city called *Media*. Sextus Rufus tells us that in his time it was called *Medena*, and from others we learn that it was also called *Aria*. The most probable history of the Medes is as follows.

This people lived in subjection to the Assyrians till the reign of Sennacherib, when they threw off the yoke, and lived for some time in a state of anarchy. But at last, rapine and violence, the natural consequences of such a situation, prevailed so much that they were constrained to have recourse to some kind of government, that they might be enabled to live in safety. Accordingly, about 699 B. C. one Dejoces having procured himself to be chosen king, united the scattered tribes into which the Medes were at that time divided; and having applied himself as much as possible to the civilization of his barbarous subjects, left the throne to his son Phraortes, after a reign of 53 years.

The new king, who was of a warlike and enterprising disposition, subdued almost all the Upper Asia lying between Mount Taurus and the river Halys which runs through Cappadocia into the Euxine Sea. Elated with this good success, he invaded Assyria, the empire of which was now much declined, and greatly weakened by the revolt of many nations which had followed the example of the Medes. Nebuchodonosor or Chyniladan, however, the reigning prince, having assembled what forces he could, engaged Phraortes, defeated, took him prisoner, and put him to death; after which, entering Media, he laid waste the country, took the metropolis of Ecbatan itself, and levelled it with the ground.

On the death of Phraortes, his son Cyaxares was placed on the throne. He was no less valiant and enterprising than his father, and had better success against the Assyrians. With the remains of that army which had been defeated under his father, he not only drove the conquerors out of Media, but obliged Chyniladan to shut himself up in Nineveh. To this place he immediately laid close siege; but was obliged to give over the enterprize on account of an irruption of the Scythians into his own country. Cyaxares engaged these new enemies with great resolution; but was utterly defeated; and the conquerors over-ran not only all Media, but the greatest part of Upper Asia, extending their conquests into Syria, and as far as the confines of Egypt. They continued masters of all this vast tract

Media
||
Mediasti-
num.

tract of country for 28 years, till at last Media was delivered from their yoke by a general massacre at the instigation of Cyaxares.

After this deliverance, the Medes soon repossessed themselves of the territories they had lost; and once more extended their frontiers to the river Halys, their ancient boundary to the westward. After this we find the Medes engaged in a war with the Lydians; which, however, ended without any remarkable transaction: but on the conclusion of it, Cyaxares having entered into a strict alliance with Nebuchadnezzar king of Babylon, returned in conjunction with the Babylonians before Nineveh; which they took and levelled with the ground, putting most of the inhabitants to the sword.

After this victory the Babylonian and Median empires seem to have been united: however, after, the death of Nebuchadnezzar, or rather in his lifetime, a war ensued, which was not extinguished but by the dissolution of the Babylonian empire. The Medes, under Astyages the son of Cyaxares I. withstood the power of the Babylonian monarchs; and under Cyrus and Cyaxares II. utterly destroyed their empire by the taking of BABYLON, as is related under that article. After the death of Cyaxares, the kingdom fell to Cyrus, by whom the seat of the empire was transferred to PERSIA, under which article the history of Media now falls to be considered, as also the manners, &c. of the inhabitants.

MEDIANA, the name of a vein or little vessel, made by the union of the cephalic and basilic, in the bend of the elbow.

MEDIASTINUM, in anatomy, a double membrane, formed by a duplicature of the pleura; serving

to divide the thorax and the lungs into two parts, and to sustain the viscera, and prevent their falling from one side of the thorax to the other. See ANATOMY, n^o 117. Mediate || Medicinal.

MEDIATE, or INTERMEDIATE, something that stands betwixt and connects two or more terms considered as extremes; in which sense it stands opposed to *immediate*.

MEDIATOR, a person that manages or transacts between two parties at variance in order to reconcile them. The word, in Scripture, is applied, 1. To Jesus Christ, who is the only intercessor and peace-maker between God and man, (1 Tim. ii. 5.) 2. To Moses, who interposed between the Lord and his people, to declare unto them his word; (Deut. v. 5. iii. 19.)

MEDICAGO, SNAIL-TREFOIL, in botany: A genus of the decandria order, belonging to the diadelphia class of plants; and in the natural method ranking under the 32d order, *Papilionacea*. The legumen is compressed and screwed; the carina of the corolla luring down from the vexillum. There are nine species, though only five are commonly cultivated in this country. They are low trailing plants, adorned with small yellow flowers, succeeded by small, round, snail-shaped fruit, which are downy, and armed with a few short spines. They are all easily propagated by seeds. For the properties and culture of LUCERN, a species of this genus, see AGRICULTURE, n^o 183.

MEDICINAL, any thing belonging to medicine.

MEDICINAL Springs, a general name for any fountain, the waters of which are of use for removing certain disorders. They are commonly either chalybeate or sulphureous. See SPRINGS and WATER.

M E D I C I N E.

MEDICINE is the art of preventing, curing, or alleviating, those diseases to which the human species are subjected.

History of Medicine.

I
Origin of
medicine
among the
Jews;

THE fabulous history of the ancients derives this art immediately from their gods; and, even among the moderns, some are of opinion that it may justly be considered as of divine revelation. But without adopting any supposition of which no probable evidence can be given, we may conclude that mankind were naturally led to it from casual observations on the diseases to which they found themselves subjected; and that therefore, in one sense at least, it is as ancient as the human race. But at what period it began to be practised as an art, by particular individuals following it as a profession, is not known. The most ancient physicians we read of were those who embalmed the patriarch Jacob by order of his son Joseph. The sacred writer styles these physicians *servants* to Joseph: whence we may be assured that they were not *priests*, as the first physicians are generally supposed to have been; for in that age we know the Egyptian priests were in such high favour, that they retained their li-

berty, when, through a public calamity, all the rest of the people were made slaves to the prince.

It is not probable, therefore, that among the Egyptians religion and medicine were originally conjoined; and if we suppose the Jews not to have invented the art, but received it from some other nation, it is as little probable that the priests of that nation were their physicians as those of Egypt.

That the Jewish physicians were absolutely distinct from their priests, is very certain. Yet as the Jews resided for such a long time in Egypt, it is probable they would retain many of the Egyptian customs, from which it would be very difficult to free them. We read, however, that when king Asa was diseased in his feet, "he sought not to the Lord, but to the physicians." Hence we may conclude, that among the Jews the medicinal art was looked upon as a mere human invention; and it was thought that the Deity never cured diseases by making people acquainted with the virtues of this or that herb, but only by his miraculous power. That the same opinion prevailed among the heathens who were neighbours to the Jews, is also probable from what we read of Ahaziah king of Judah, who having sent messengers to inquire of

Origin of
Medicine.Origin of
Medicine.

of Baal-zebub god of Ekron concerning his disease, he did not desire any remedy from him or his priests, but simply to know whether he should recover or not.

What seems most probable on this subject therefore is, that religion and medicine came to be mixed together only in consequence of that degeneracy into ignorance and superstition which took place among all nations. The Egyptians, we know, came at last to be sunk in the most ridiculous and absurd superstition; and then, indeed, it is not wonderful to find their priests commencing physicians, and mingling charms, incantations, &c. with their remedies. That this was the case, though long after the days of Joseph, we are very certain; and indeed it seems as natural for ignorance and barbarism to combine religion with physic, as it is for a civilized and enlightened people to keep them separate. Hence we see, that among all modern barbarians their priests or conjurers are their only physicians.

Among the
Egyptians;

We are so little acquainted with the state of physic among the Egyptians, that it is needless to say much concerning them. They attributed the invention of medicine, as they did also that of many other arts, to Thoth, the HERMES or MERCURY of the Greeks. He is said to have written many things in hieroglyphic characters upon certain pillars, in order to perpetuate his knowledge, and render it useful to others. These were transcribed by Agathodemon, or the second Mercury, the father of Tat, who is said to have composed books of them, that were kept in the most sacred places of the Egyptian temples. The existence of such a person, however, is very dubious, and many of the books ascribed to him were accounted forgeries as long ago as the days of Galen; there is also great reason to suspect that those books were written many ages after Hermes, and when physic had made considerable advances. Many of the books attributed to him are trifling and ridiculous; and though sometimes he is allowed to have all the honour of inventing the art, he is on other occasions obliged to share it with Osiris, Isis, and Apis or Serapis.

After all, the Egyptian physic appears to have been little else than a collection of absurd superstitions. Origen informs us, that they believed there were 36 demons, or gods of the air, who divided the human body among them; that they had names for all of them; and that by invoking them according to the part affected, the patient was cured. Of natural medicines we hear of none recommended by the father of Egyptian physic; except the herb *moly*, which he gave to Ulysses in order to secure him from the enchantments of Circe; and the herb *mercury*, of which he first discovered the use. His successors made use of venesection, cathartics, emetics, and clysters. There is no proof, however, that this practice was established by Hermes; on the contrary, the Egyptians themselves pretended that the first hint of those remedies was taken from some observations on brute animals. Venesection was taught them by the hippopotamus, which is said to perform this operation upon itself. On these occasions, he comes out of the river, and strikes his leg against a sharp-pointed reed. As he takes care to direct the stroke against a vein, the consequence must be a considerable effusion of blood; and this being suffered to run as long as the creature thinks proper, he at last

stops up the orifice with mud. The hint of clysters was taken from the ibis, a bird which is said to give itself clysters with its bill, &c. They used venesection, however, but very little, probably on account of the warmth of the climate; and the exhibition of the remedies above mentioned, joined with abstinence, formed the most of their practice.

The Greeks too had several persons to whom they attributed the invention of physic, particularly Prometheus, Apollo or Pæan, and Æsculapius; which last was the most celebrated of any. But here we must observe, that as the Greeks were a very warlike people, their physic seems to have been little else than what is now called *surgery*, or the cure of wounds, fractures, &c. Hence Æsculapius, and his pupils Chiron, Machaon, and Podalirius, are celebrated by Homer only for their skill in curing these, without any mention of their attempting the cures of internal diseases. We are not, however, to suppose that they confined themselves entirely to surgery. They no doubt would occasionally prescribe for internal disorders; but as they were most frequently conversant with wounds, we may naturally suppose the greatest part of their skill to have consisted in knowing how to cure these. If we may believe the poets, indeed, the knowledge of medicine seems to have been very generally diffused. Almost all the heroes of antiquity are reported to have been physicians as well as warriors. Most of them were taught physic by the centaur Chiron. From him Hercules received instructions in the medicinal art, in which he is said to have been no less expert than in feats of arms. Several plants were called by his name; whence some think it probable that he found out their virtues, though others are of opinion that they bore the name of this renowned hero on account of their great efficacy in removing diseases. Aristæus king of Arcadia was also one of Chiron's scholars; and is supposed to have discovered the use of the drug called *silphium*, by some thought to be *asafætida*. Theseus, Telamon, Jason, Peleus, and his son Achilles, were all renowned for their knowledge in the art of physic. The last is said to have discovered the use of verdegrise in cleansing foul ulcers. All of them, however, seem to have been inferior in knowledge to Palamedes, who hindered the plague from coming into the Grecian camp after it had ravaged most of the cities of Hellepont, and even Troy itself. His method was to confine his soldiers to a spare diet, and to oblige them to use much exercise.

The practice of these ancient Greek physicians, notwithstanding the praises bestowed on them by their poets, seems to have been very limited, and in some cases even pernicious. All the external remedies applied to Homer's wounded heroes were fomentations; while inwardly their physicians gave them wine, sometimes mingled with cheese scraped down. A great deal of their physic also consisted in charms, incantations, amulets, &c. of which, as they are common to all superstitious and ignorant nations, it is superfluous to take any farther notice.

In this way the art of medicine continued among the Greeks for many ages. As its first professors knew nothing of the animal œconomy, and as little of the theory of diseases, it is plain, that whatever they did

4
Æsculapius.

must have been in consequence of mere random trials, or empiricism, in the most strict and proper sense of the word. Indeed, it is evidently impossible that this or almost any other art could originate from another source than trials of this kind. Accordingly, we find, that some ancient nations were accustomed to expose their sick in temples, and by the sides of highways, that they might receive the advice of every one who passed. Among the Greeks, however, Æsculapius was reckoned the most eminent practitioner of his time, and his name continued to be revered after his death. He was ranked amongst the gods; and the principal knowledge of the medicinal art remained with his family to the time of Hippocrates, who reckoned himself the seventeenth in a lineal descent from Æsculapius, and who was truly the first who treated of medicine in a regular and rational manner.

5
Hippocrates.

Hippocrates, who is supposed to have lived 400 years before the birth of Christ, is the most ancient author whose writings expressly on the subject of the medical art are preserved; and he is therefore justly considered as the father of physic. All the accounts which we have prior to this time, if not evidently fabulous, are at the utmost highly conjectural. Even the medical knowledge of Pythagoras, so much celebrated as a philosopher, can hardly be considered as resting on any other foundation. But from the time of Hippocrates, medicine, separated from philosophy and religion, seems to have assumed the form of a science, and to have been practised as a profession. It may not, therefore, be improper to give a particular account of the state of medical knowledge as transmitted to us in his writings. The writings of Hippocrates, however, it may be remarked, are even more than preserved. Nor is it wonderful that attempts should have been made to increase the value of manuscripts, by attributing them to a name of such eminence. But although what are transmitted to us under the title of his works may have been written by different hands, yet the presumption is, that most, if not all of them, are of nearly as early a date, and contain the prevailing opinions of those times.

6
His writings.

According to the most authentic accounts, Hippocrates was a native of the island of Cos, and born in the beginning of the 88th Olympiad. In the writings transmitted to us as his, we find a general principle adopted, to which he gives the name of *Nature*. To this principle he ascribes a mighty power. "Nature (says he) is of itself sufficient to every animal. She performs every thing that is necessary to them, without needing the least instruction from any one how to do it." Upon this footing, as if Nature had been a principle endowed with knowledge, he gives her the title of *just*; and ascribes virtues or powers to her, which are her servants, and by means of which she performs all her operations in the bodies of animals: and distributes the blood, spirits, and heat, through all parts of the body, which by these means receive life and sensation. And in other places he tells us, that it is this faculty which gives nourishment, preservation, and growth, to all things.

7
His idea of nature.

The manner in which nature acts, or commands her subservient power to act, is by attracting what is good and agreeable to each species, and by retaining, preparing, and changing it; and on the other side in

rejecting whatever is superfluous or hurtful, after she has separated it from the good. This is the foundation of the doctrine of depuration, concoction, and crisis in fevers, so much insisted upon by Hippocrates and most other physicians. He supposes also, that every thing has an inclination to be joined to what agrees with it, and to remove from every thing contrary to it; and likewise that there is an affinity between the several parts of the body, by which they mutually sympathize with each other. When he comes to explain what this principle called *nature* is, he is obliged to resolve it into *heat*, which, he says, appears to have something immortal in it.

Hippocrates.

As far as he attempts to explain the causes of disease, he refers much to the humours of the body, particularly to the blood and the bile. He treats also of the effects of sleep, watchings, exercise, and rest, and all the benefit or mischief we may receive from them. Of all the causes of diseases, however, mentioned by Hippocrates, the most general are diet and air. On the subject of diet he has composed several books, and in the choice of this he was exactly careful; and the more so, as his practice turned almost wholly upon it. He also considered the air very much; he examined what winds blew ordinarily or extraordinarily; he considered the irregularity of the seasons, the rising and setting of stars, or the time of certain constellations; also the time of the solstices, and of the equinoxes; those days, in his opinion, producing great alterations in certain distempers.

8
Of the causes of disease.

He does not, however, pretend to explain how, from these causes, that variety of distempers arises which is daily to be observed. All that can be gathered from him with regard to this is, that the different causes above-mentioned, when applied to the different parts of the body, produce a great variety of distempers. Some of these distempers he accounted *mortal*, others *dangerous*, and the rest easily *curable*, according to the cause from whence they spring, and the parts on which they fall. In several places also he distinguishes diseases, from the time of their duration, into *acute* or *short*, and *chronical* or *long*. He likewise distinguishes diseases by the particular places where they prevail, whether ordinary or extraordinary. The first, that is, those that are frequent and familiar to certain places, he called *endemic* diseases; and the latter, which ravaged extraordinarily sometimes in one place, sometimes in another, which seized great numbers at certain times, he called *epidemic*, that is, *popular* diseases; and of this kind the most terrible is the plague. He likewise mentions a third kind, the opposite of the former; and these he calls *sporadic*, or *straggling* diseases: these last include all the different sorts of distempers which invade at any one season, which are sometimes of one sort, and sometimes of another. He distinguished between those diseases which are hereditary, or born with us, and those which are contracted afterwards; and likewise between those of a *kindly* and such as are of a *malignant* nature, the former of which are easily and frequently cured, but the latter give the physicians a great deal of trouble, and are seldom overcome by all their care.

9
His divisions of diseases.

Hippocrates remarked four stages in distempers; *viz.*

Hippo-
crates.Hippo-
crates.10
His opinion
of a crisis.11
His accuracy
in prognostics;

viz. the beginning of the disease, its augmentation, its state or height, and its declination. In such diseases as terminate fatally, death comes in place of the declination. In the third stage, therefore, the change is most considerable, as it determines the fate of the sick person; and this is most commonly done by means of a *crisis*. By this word he understood any sudden change in sickness, whether for the better or for the worse, whether health or death succeed immediately. Such a change, he says, is made at that time by *nature*, either absolving or condemning the patient. Hence we may conclude, that Hippocrates imagined diseases to be only a disturbance of the animal economy, with which Nature was perpetually at variance, and using her utmost endeavours to expel the offending cause. Her manner of acting on these occasions is to reduce to their natural state those humours whose discord occasions the disturbance of the whole body, whether in relation to their quantity, quality, mixture, motion, or any other way in which they become offensive. The principal means employed by nature for this end is what Hippocrates calls *concoction*. By this he understood the bringing the morbid matter lodged in the humours to such a state, as to be easily fitted for expulsion by whatever means nature might think most proper. When matters are brought to this pass, whatever is superfluous or hurtful immediately empties itself, or nature points out to physicians the way by which such an evacuation is to be accomplished. The crisis takes place either by bleeding, stool, vomit, sweat, urine, tumors or abscesses, scabs, pimples, spots, &c. But these evacuations are not to be looked upon as the effects of a true crisis, unless they are in considerable quantity; small discharges not being sufficient to make a crisis. On the contrary, small discharges are a sign that nature is depressed by the load of humours, and that she lets them go thro' weakness and continual irritation. What comes forth in this manner is crude, because the distemper is yet too strong; and while matters remain in this state, nothing but a bad or imperfect crisis is to be expected. This shows that the distemper triumphs, or at least is equal in strength to nature, which prognosticates death, or a prolongation of the disease. In this last case, however, nature often has an opportunity of attempting a new crisis more happy than the former, after having made fresh efforts to advance the concoction of the humours.—It must here be observed, however, that, according to Hippocrates, concoction cannot be made but in a certain time, as every fruit has a limited time to ripen; for he compares the humours which nature has digested to fruits come to maturity.

The time required for concoction depends on the differences among distempers mentioned above. In those which Hippocrates call *very acute*, the digestion or crisis happens by the fourth day; in those which are only *acute*, it happens on the seventh, 11th, or 14th day; which last is the longest period generally allowed by Hippocrates in distemper that are truly acute: though in some places he stretches it to the 20th. or 21st, nay, sometimes to the 40th or 60th days. All diseases that exceed this last term are called *chronical*. And while in those diseases that

exceed 14 days, he considers every fourth day as critical, or at least remarkable, by which we may judge whether the crisis on the following fourth day will be favourable or not; so in those which run from 20 to 40 he reckons only the sevenths, and in those that exceed 40 he begins to reckon by 20. Beyond the 120th he thinks that the number of days has no power over the crisis. They are then referred to the general changes of the seasons; some terminating about the equinoxes; others about the solstices; others about the rising or setting of the stars of certain constellations; or if numbers have yet any place, he reckons by months, or even whole years. Thus (he says), certain diseases in children have their crisis in the seventh month after their birth, and others in their seventh or even their 14th year.

Though Hippocrates mentions the 21st as one of the critical days in acute distempers, as already noticed; yet, in other places of his works, he mentions also the 20th. The reason he gives for this in one of those places of his work is, that the days of sickness were not quite entire. In general, however, he is much attached to the odd days: inasmuch that in one of his aphorisms he tells us, "The sweats that come out upon the 3d, 5th, 7th, 9th, 11th, 14th, 17th, 21st, 27th, 31st, or 34th day, are beneficial; but those that come out upon other days signify that the sick shall be brought low, that his disease shall be very tedious, and that he shall be subject to relapses." He further says, "That the fever which leaves the sick upon any but an odd day is usually apt to relapse." Sometimes, however, he confesses that it is otherwise; and he gives an instance of a salutary crisis happening on the sixth day. But these are very rare instances, and therefore cannot, in his opinion, overthrow the general rule.

Besides the crisis, however, or the change which determines the fate of the patient, Hippocrates often speaks of another, which only changes the species of the distemper, without restoring the patient to health; as when a vertigo is turned to an epilepsy, a tertian fever to a quartan, or to a continual, &c.

But what has chiefly contributed to procure the vast respect generally paid to Hippocrates, is his industry in observing the most minute circumstances of diseases, and his exactness in nicely describing every thing that happened before, and every accident that appeared at the same time with them; and likewise what appeared to give ease, and what to increase the malady: which is what we call *writing the history of a disease*.—Thus he not only distinguished one disease from another by the signs which properly belonged to each; but by comparing the same sort of distemper which happened to several persons, and the accidents which usually appeared before and after, he could often foretel a disease before it came, and afterwards give a right judgment of the event of it. By this way of prognosticating, he came to be exceedingly admired: and this he carried to such a height, that it may justly be said to be his master-piece; and Celsus, who lived after him, remarks, that succeeding physicians, though they found out several new things relating to the management of diseases, yet were obli-

Hippo-
crates.From the
look;

ged to the writings of Hippocrates for all that they knew of signs.

The first thing Hippocrates considered, when called to a patient, was his looks.—It was a good sign with him to have a visage resembling that of a person in health, and the same with what the sick man had before he was attacked by the disease. As it varied from this, so much the greater danger was apprehended. The following is the description which he gives of the looks of a dying man.—“When a patient (says he) has his nose sharp, his eyes sunk, his temples hollow, his ears cold and contracted, the skin of his forehead tense and dry, and the colour of his face tending to a pale-green, or lead colour, one may give out for certain that death is very near at hand; unless the strength of the patient has been exhausted all at once by long watchings, or by a looseness, or being a long time without eating.” This observation has been confirmed by those of succeeding physicians, who have, from him, denominated it the *Hippocratic face*. The lips hanging relaxed and cold, are likewise looked upon by this author as a confirmation of the foregoing prognostic. He took also his signs from the disposition of the eyes in particular. When a patient cannot bear the light; when he sheds tears involuntarily; when, in sleeping, some part of the white of the eye is seen, unless he usually sleeps after that manner, or has a looseness upon him: these signs, as well as the foregoing ones, prognosticate danger. The eyes deadened, as it were with a mist spread over them, or their brightness lost, likewise presages death, or great weakness. The eyes sparkling, fierce, and fixed, denote the patient to be delirious, or that he soon will be seized with a frenzy. When the patient sees any thing red, and like sparks of fire and lightning pass before his eyes, you may expect an hæmorrhagy; and this often happens before those crises which are to be attended by a loss of blood.

From the
posture in
bed;

The condition of the patient is also shown by his posture in bed. If you find him lying on one side, his body, neck, legs, and arms, a little contracted, which is the posture of a man in health, it is a good sign: on the contrary, if he lies on his back, his arms stretched out, and his legs hanging down, it is a sign of great weakness; and particularly when the patient slides or lets himself fall down towards the feet, it denotes the approach of death. When a patient in a burning fever is continually feeling about with his hands and fingers, and moves them up before his face and eyes as if he was going to take away something that passed before them; or on his bed-covering, as if he was picking or searching for little straws, or taking away some filth, or drawing out little flocks of wool; all this is a sign that he is delirious, and that he will die. Amongst the other signs of a present or approaching delirium he also adds this: When a patient who naturally speaks little begins to talk more than he used to do, or when one that talks much becomes silent, this change is to be reckoned a sort of delirium, or is a sign that the patient will soon fall into one. The frequent trembling or starting of the tendons of the wrist, presage likewise a delirium. As to the different sorts of delirium, Hippocrates is much more afraid

of those that run upon mournful subjects, than such as are accompanied with mirth.

When a patient breathes fast, and is oppressed, it is a sign that he is in pain, and that the parts above the diaphragm are inflamed. Breathing long, or when the patient is a great while in taking his breath, shows him to be delirious; but easy and natural respiration is always a good sign in acute diseases. Hippocrates depended much on respiration in making his prognostics; and therefore has taken care in several places to describe the different manner of a patient's breathing. Continual watchings in acute diseases, are signs of present pain, or a delirium near at hand.

Hippocrates also drew signs from all excrements, whatever they are, that are separated from the body of man. His most remarkable prognostics, however, were from the urine. The patient's urine, in his opinion, is best when the sediment is white, soft to the touch, and of an equal consistence. If it continue so during the course of the distemper, and till the time of the crisis, the patient is in no danger, and will soon be well. This is what Hippocrates called *concocted urine*, or what denotes the concoction of the humours; and he observed, that this concoction of the urine seldom appeared thoroughly, but on the days of the crisis which happily put an end to the distemper. “We ought (said Hippocrates) to compare the urine with the purulent matter which runs from ulcers. As the pus, which is white, and of the same quality with the sediment of the urine we are now speaking of, is a sign that the ulcer is on the point of closing; so that which is clear, and of another colour than white, and of an ill smell, is a sign that the ulcer is virulent, and in the same manner difficult to be cured: the urines that are like this we have described are only those which may be named good; all the rest are ill, and differ from one another only in the degrees of more and less. The first never appear but when nature has overcome the disease; and are a sign of the concoction of humours, without which you cannot hope for a certain cure. On the contrary, the last are made as long as the crudity remains, and the humours continue unconcocted. Among the urines of this last sort, the best are reddish, with a sediment that is soft, and of an equal consistence; which denotes, that the disease will be somewhat tedious, but without danger. The worst are those which are very red, and at the same time clear and without sediment; or that are muddy and troubled in the making. In urine there is often a sort of cloud hanging in the vessel in which it is received; the higher this rises, or the farther distant it is from the bottom, or the more different from the colour of the laudable sediment abovementioned, the more there is of crudity. That which is yellow, or of a sandy colour, denotes abundance of bile; that which is black is the worst, especially if it has an ill smell, and is either altogether muddy or altogether clear. That whose sediment is like large ground wheat, or little flakes or scales spread one upon another, or bran, presages ill, especially the last. The fat or oil that sometimes swims upon the top of the urine, and appears in a form something like a spider's web, is a sign of a consumption of the flesh and solid parts. The ma-
king

Hippo-
crates.From re-
spiration;From ex-
crementiti-
ous dischar-
ges.

Urine.

Hippo-
crates.Hippo-
crates.

king of a great quantity of urine is the sign of a crisis, and sometimes the quality of it shows how the bladder is affected. We must also observe, that Hippocrates compared the state of the tongue with the urine; that is to say, when the tongue was yellow, and charged with bile, the urine he knew must of course be of the same colour; and when the tongue was red and moist, the urine was of its natural colour.

Fæces.

His prognostics from the excretions by stool are as follow. Those that are soft, yellowish, of some consistence, and not of an extraordinary ill smell, that answer to the quantity of what is taken inwardly, and that are voided at the usual hours, are the best of all. They ought also to be of a thicker consistence when the distemper is near the crisis; and it ought to be taken for a good prognostic, when some worms, round and long, are evacuated at the same time with them. The prognosis, however, may still be favourable, though the matter excreted be thin and liquid, provided it make not too much noise in coming out, and the evacuation be not in a small quantity nor too often; nor in so great abundance, nor so often, as to make the patient faint. All matter that is watery, white, of a pale green, or red, or frothy and viscous, is bad. That which is blackish, or of a livid hue, is the most pernicious. That which is pure black, and nothing else but a discharge of black bile, always prognosticates very ill; this humour, from what part soever it comes, showing the ill disposition of the intestines. The matter that is of several different colours, denotes the length of the distemper; and, at the same time, that it may be of dangerous consequence. Hippocrates places in the same class the matter that is bilious or yellow, and mixed with blood, or green and black, or like the dregs or scrapings of the guts. The stools that consist of pure bile, or entirely of phlegm, he also looks upon to be very bad.

Matter cast up by vomiting ought to be mixed with bile and phlegm; where one of these humours only is observed, it is worse. That which is black, livid, green, or of the colour of a leek, indicates alarming consequences. The same is to be said of that which smells very ill; and if at the same time it be livid, death is not far off. The vomiting of blood is very often mortal.

Expectora-
tion.

The spittings which give ease in diseases of the lungs and in pleurifies, are those that come up readily and without difficulty; and it is good if they be mixed at the beginning with much yellow: but if they appear of the same colour, or are red, a great while after the beginning of the distemper, are salt and acrimonious, and cause violent coughings, they are not good. Spittings purely yellow are bad; and those that are white, viscous, and frothy, give no ease. Whiteness is a good sign of concoction in regard to spittings; but they ought not at all to be viscous, nor too thick, nor too clear. We may make the same judgment of the excrements of the nose according to their concoction and crudity. Spittings that are black, green, and red, are of very bad consequence. In inflammations of the lungs, those that are mixed with bile and blood presage well if they appear at the beginning, but are bad if they arise not about the seventh day. But the worst sign in these distempers is, when there is no expectoration at all,

and the too great quantity of matter that is ready to be discharged this way makes a rattling in the breast. After spitting of blood, the discharge of purulent matter often follows, which brings on a consumption, and at last death.

A kind good sweat is that which arises on the day of the crisis, and is discharged in abundance all over the body, and at the same time from all parts of the body, and thus carries off the fever: A cold sweat is alarming, especially in acute fevers, for in others it is only a sign of long continuance. When the patient sweats no where but on the head and neck, it is a sign that the disease will be long and dangerous. A gentle sweat in some particular part, of the head and breast, for instance, gives no relief, but denotes the seat of the distemper, or the weakness of the part. This kind of sweat was called by Hippocrates *epidrosis*.

The hypochondria, or the abdomen in general, ought always to be soft and even, as well on the right side as on the left. When there is any hardness or unevenness in those parts, or heat and swellings, or when the patient cannot endure to have it touched, it is a sign the intestines are indisposed.

Hippocrates also inquired into the state of the pulse, or the beating of the arteries. The most ancient physicians, however, and even Hippocrates himself, for a long time, by this word understood the violent pulsation that is felt in an inflamed part, without putting the fingers to it. It is observed by Galen, and other physicians, that Hippocrates touches on the subject of the pulse more slightly than any other on which he treats. But that our celebrated physician understood something even on this subject, is easily gathered from several passages in his writings; as when he observes, that in acute fevers the pulse is very quick and very great; and when he makes mention, in the same place, of trembling pulses, and those that beat slowly; when he observes, that in some diseases incident to women, when the pulse strikes the finger faintly, and in a languishing manner, it is a sign of approaching death. He remarks also, in the *Coacæ Prænotiones*, that he whose vein, that is to say, whose artery of the elbow, beats, is just going to run mad, or else that the person is at that time very much under the influence of anger.

From this account of Hippocrates, it will appear, that he was not near so much taken up with reasoning on the phenomena of diseases, as with reporting them. He was content to observe these phenomena accurately, to distinguish diseases by them, and judged of the event by comparing them exactly together. For his skill in prognostics he was indeed very remarkable, as we have already mentioned, inasmuch that he and his pupils were looked upon, by the vulgar as prophets. What adds very much to his reputation is, that he lived in an age when physic was altogether buried in superstition, and yet he did not suffer himself to be carried away by it; on the contrary, on many occasions, he expresses his abhorrence of it.

Having thus seen in what Hippocrates makes the difference between health and sickness to consist, and likewise the most remarkable signs from whence he drew his prognostics, we must now consider the means he prescribed for the preservation of health, and the cure.

Hippocrates.

12
His maxims
for the pre-
servation
of health.

Diet.

Exercise.

cure of diseases. One of his principal maxims was this, That, to preserve health, we ought not to overcharge ourselves with too much eating, nor neglect the use of exercise and labour. In the next place, That we ought by no means to accustom ourselves to too nice and exact a method of living; because those who have once begun to act by this rule, if they vary in the least from it, find themselves very ill; which does not happen to those who take a little more liberty, and live somewhat more irregularly. Notwithstanding this, he does not neglect to inquire diligently into what those who were in health used for food in his time. Here we cannot help taking notice of the prodigious disparity between the delicacy of the people in our days and in those of Hippocrates: for he takes great pains to tell the difference between the flesh of a dog, a fox, a horse, and an ass; which he would not have done if at that time they had not been used for victuals, at least by the common people. Besides these, however, Hippocrates speaks of all other kinds of provision that are now in use; for example, salads, milk, whey, cheese, flesh as well of birds as of four-footed beasts, fresh and salt fish, eggs, all kinds of pulse, and the different kinds of grain we feed on, as well as the different sorts of bread that are made of it. He also speaks very often of a sort of liquid food, or broth, made of barley-meal, or some other grain, which they steeped for some time, and then boiled in water. With regard to drink, he takes a great deal of pains to distinguish the good waters from the bad. The best, in his opinion, ought to be clear, light, without smell or taste, and taken out of the fountains that turn towards the east. The salt-waters, those that he calls hard, and those that rise out of fenny ground, are the worst of all; he condemns also those that come from melted snow. But though Hippocrates makes all those distinctions, he advises those who are in health to drink of the first water that comes in their way. He speaks also of alum waters, and those that are hot; but does not enlarge upon their qualities. He advises to mix wine with an equal quantity of water; and this (he says) is the just proportion; by using which the wine will expel what is hurtful to the body, and the water will serve to temper the acrimony of the humours.

For those that are in health, and likewise for such as are sick, Hippocrates advises exercise. The books, however, which treat on this subject, M. Le Clerc conjectures to have been written by Herodicus, who first introduced gymnastic exercise into medicine, and who is said by Hippocrates himself to have killed several people by forcing them to walk while they were afflicted with fevers and other inflammatory disorders. The advices given in them consist mostly in directions for the times in which we ought to walk, and the condition we ought to be in before it; when we ought to walk slowly, and when to run, &c.; and all this with respect to different ages and temperaments, and with design to bring the body down, or dissipate the humours. Wrestling, although a violent exercise, is numbered with the rest. In the same place also mention is made of a play of the hands and fingers, which was thought good for health, and called *chironomie*; and of another diversion which was performed round a sort of ball hung up, which they called

N^o 202.

corycus, and which they struck forward with both their hands.

With regard to those things which ought to be separated from, or retained in the human body, Hippocrates observes, that people ought to take great care not to load themselves with excrements, or keep them in too long; and besides the exercise above-mentioned, which carries off one part of them, and which he prescribed chiefly on this account, he advises people to excite and rouse up nature when she flagged, and did not endeavour to expel the rest, or take care of the impediments by which she was resisted. For this reason he prescribed meats proper for loosening the belly; and when these were not sufficient, he directed the use of clysters and suppositories. For thin and emaciated persons he directed clysters composed only of milk and oily unctuous substances, which they mixed with a decoction of chick-pease; but for such as were plethoric, they only made use of salt or sea-water.

As a preservative against distempers, Hippocrates also advised the use of vomits, which he directed to be taken once or twice a month during the time of winter and spring. The most simple of these were made of a decoction of hyssop, with an addition of a little vinegar and salt. He made those that were of a strong and vigorous constitution take this liquor in a morning fasting; but such as were thin and weakly took it after supper.—Venery, in his opinion, is wholesome, provided people consult their strength, and do not pursue it to excess; which he finds fault with on all occasions, and would have excess avoided also in relation to sleep and watching. In his writings are likewise to be found several remarks concerning good and bad air; and he makes it appear that the good or bad disposition of this element does not depend solely on the difference of the climate, but on the situation of every place in particular. He speaks also of the good and bad effects of the passions, and recommends moderation in regard to them.

From what we have already related concerning the opinions of Hippocrates, it may naturally be concluded, that for the most part he would be contented with observing what the strength of nature is able to accomplish without being assisted by the physician. That this was really the case, may be easily perceived from a perusal of his books entitled, “Of epidemical distempers;” which are, as it were, journals of the practice of Hippocrates: for there we find him often doing nothing more than describing the symptoms of a distemper, and informing us what has happened to the patient day after day, even to his death or recovery, without speaking a word of any kind of remedy. Sometimes, however, he did indeed make use of remedies; but these were exceedingly simple and few, in comparison of what have been given by succeeding practitioners. These remedies we shall presently consider, after we have given an abridgement of the principal maxims on which his practice is founded.

Hippocrates asserted in the first place, That contraries, or opposites, are the remedies for each other; and this maxim he explains by an aphorism; in which he says, that evacuations cure those distempers which come from repletion, and repletion those that are caused

Hippocrates.

Excretions.

13
His maxims
for the
cure of dis-
ease.

fed

Hippo-
crates.

fed by evacuation. So heat is destroyed by cold, and cold by heat, &c. In the second place, he asserted, that physic is an addition of what is wanting, and a subtraction or retrenchment of what is superfluous: an axiom which is explained by this, viz. that there are some juices or humours, which in particular cases ought to be evacuated, or driven out of the body, or dried up; and some others which ought to be restored to the body, or caused to be produced there again. As to the method to be taken for this addition or retrenchment, he gives this general caution, That you ought to be careful how you fill up, or evacuate, all at once, or too quickly, or too much; and that it is equally dangerous to heat or cool again on a sudden; or rather, you ought not to do it: every thing that runs to an excess being an enemy to nature. In the fourth place, Hippocrates allowed that we ought sometimes to dilate, and sometimes to lock up: to dilate, or open the passages by which the humours are voided naturally, when they are not sufficiently opened, or when they are closed; and, on the contrary, to lock up or straiten the passages that are relaxed, when the juices that pass there ought not to pass, or when they pass in too great quantity. He adds, that we ought sometimes to smooth, and sometimes to make rough; sometimes to harden, and sometimes to soften again; sometimes to make more fine or supple; sometimes to thicken; sometimes to rouse up, and at other times to stupify or take away the sense; all in relation to the solid parts of the body, or to the humours. He gives also this farther lesson, That we ought to have regard to the course the humours take, from whence they come, and whither they go; and in consequence of that, when they go where they ought not, that we make them take a turn about, or carry them another way, almost like the turning the course of a river: or, upon other occasions, that we endeavour if possible to recal, or make the same humours return back again; drawing upward such as have a tendency downward, and drawing downward such as tend upward. We ought also to carry off, by convenient ways, that which is necessary to be carried off; and not let the humours once evacuated enter into the vessels again. Hippocrates gives also the following instruction, That when we do any thing according to reason, though the success be not answerable, we ought not too easily, or too hastily, to alter the manner of acting, as long as the reasons for it are yet good. But as this maxim might sometimes prove deceitful, he gives the following as a corrector to it: "We ought (says he) to mind with a great deal of attention what gives ease, and what creates pain; what is easily supported, and what cannot be endured." We ought not to do any thing rashly; but ought often to pause, or wait, without doing any thing: by this way, if you do the patient no good, you will at least do him no hurt.

These are the principal and most general maxims of the practice of Hippocrates, and which proceed upon the supposition laid down at the beginning, viz. that nature cures diseases. We next proceed to consider particularly the remedies employed by him, which will serve to give us further instructions concerning his practice.

14
His max-
ims respect-
ing diet.

Diet was the first, the principal, and often the only remedy made use of by this great physician to answer
VOL. XI. Part I.

the greatest part of the intentions above mentioned: by means of it he opposed moist to dry, hot to cold, &c.; and what he looked upon to be the most considerable point was, that thus he supported nature, and assisted her to overcome the malady. The dietetic part of medicine was so much the invention of Hippocrates himself, that he was very desirous to be accounted the author of it; and the better to make it appear that it was a new remedy in his days, he says expressly, that the ancients had wrote almost nothing concerning the diet of the sick, having omitted this point, though it was one of the most essential parts of the art.

Hippo-
crates.

The diet prescribed by Hippocrates for patients labouring under acute distempers, differed from that which he ordered for those afflicted with chronical ¹⁵ diseases. Diet in acute dis-

ones. In the former, which require a more particular exactness in relation to diet, he preferred liquid food to that which was solid, especially in fevers. For these he used a sort of broth made of cleansed barley; and to this he gave the name of *ptisan*. The manner in which the ancients prepared a *ptisan* was as follows: They first steeped the barley in water till it was plumped up; and afterwards they dried it in the sun, and beat it to take off the husk. They next ground it; and having let the flour boil a long time in the water, they put it out into the sun, and when it was dry they pressed it close. It is properly this flour so prepared that is called *ptisan*. They did almost the same thing with wheat, rice, lentils, and other grain: but they gave these *ptisans* the name of the grain from whence they were extracted, as *ptisan of lentils, rice, &c.* whereas the *ptisan* of barley was called simply *ptisan*, on account of the excellency of it. When they wanted to use it, they boiled one part of it in 10 or 15 of water; and when it began to grow plump in boiling, they added a little vinegar, and a very small quantity of anise or leek, to keep it from clogging or filling the stomach with wind. Hippocrates prescribes this broth for women that have pains in their belly after delivery. "Boil some of this *ptisan* (says he), with some leek, and the fat of a goat, and give it to the woman in bed." This will not be thought very singular, if we reflect on what has been hinted above concerning the indelicate manner of living in those times. He preferred the *ptisan* to all other food in fevers, because it softened and moistened much, and was besides of easy digestion. If he was concerned in a continual fever, he would have the patient begin with a *ptisan* of a pretty thick consistence, and go on by little and little, lessening the quantity of barley-flour as the height of the distemper approached; so that he did not feed the patient but with what he called the *juice of the ptisan*; that is, the *ptisan* strained, where there was but very little of the flour remaining, in order that nature being discharged in part from the care of digesting the aliments, she might the more easily hold out to the end, and overcome the distemper, or the cause of it. With regard to the quantity, he caused the *ptisan* to be taken twice a-day by such patients as in health used to take two meals a-day, not thinking it convenient that those who were sick should eat oftener than when they were well. He also would not allow eating twice a-day to those who eat but once in that time when in health. In the paroxysm of a

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fever

Hippo-
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fever he gave nothing at all; and in all distempers where there are exacerbations, he forbid nourishment while the exacerbations continued. He let children eat more; but those who were grown up to man's estate, or were of an advanced age, less; making allowance, however, for the custom of each particular person, or for that of the country.

But though he was of opinion that too much food ought not to be allowed to the sick, he was not of the mind of some physicians who prescribed long abstinence, especially in the beginning of fevers. The reason he gave for this was, that the contrary practice weakened the patients too much during the first days of the distemper, by which means their physicians were obliged to allow them more food when the illness was at its height, which in his opinion was improper. Besides, in acute distempers, and particularly in fevers, Hippocrates made choice of refreshing and moistening nourishment; and amongst other things prescribed orange, melon, spinach, gourd, and dock. This sort of food he gave to those that were in a condition to eat, or could take something more than a ptisan.

Drink.

The drink he commonly gave to his patients was made of eight parts of water and one of honey. In some distempers they added a little vinegar; but besides these, they had another sort named *κυσίον*, or *mixture*. One prescription of this sort we find intended for a consumptive person; it consisted of rue, anise, celery, coriander, juice of pomegranate, the roughest red wine, water, flour of wheat and barley, with old cheese made of goats milk. Hippocrates did not approve of giving plain water to the sick; but though he generally prescribed the drinks above mentioned, he did not absolutely forbid the use of wine, even in acute distempers and fevers, provided the patients were not delirious nor had pains in their head. Besides, he took care to distinguish the wines proper in these cases: preferring to all other sorts white-wine that is clear and has a great deal of water, with neither sweetness nor flavour.

16
Diet in chronic diseases.

These are the most remarkable particulars concerning the diet prescribed by Hippocrates in acute distempers; in chronical ones he made very much use of milk and whey; though we are not certain whether this was done on account of the nourishment expected from them, or that he accounted them medicines.

17
His maxims respecting bathing.

There were many diseases for which he judged the bath was a proper remedy; and he takes notice of all the circumstances that are necessary in order to cause the patient receive benefit from it, among which the following are the principal. The patient that bathes himself must remain still and quiet in his place without speaking while the assistants throw water over his head or are wiping him dry; for which last purpose he desired them to keep sponges, instead of that instrument called by the ancients *strigil*, which served to rub off from the skin the dirt and nastiness left upon it by the unguents and oils with which they anointed themselves. He must also take care not to catch cold; and must not bathe immediately after eating and drinking, nor eat or drink immediately after coming out of the bath. Regard must also be had whether the patient has been accustomed to bathe while in

health, and whether he has been benefited or hurt by it. Lastly, he must abstain from the bath when the body is too open, or too collicive, or when he is too weak; or if he has an inclination to vomit, a great loss of appetite, or bleeds at the nose. The advantage of the bath, according to Hippocrates, consists in moistening and refreshing, taking away weariness, making the skin soft and the joints pliant; in provoking urine, making the nostrils open, and opening the other excretories. He allows two baths in a day to those who have been accustomed to it in health.

In chronical distempers Hippocrates approved very much of exercise, though he did not allow it in acute ones: but even in these he did not think that a patient ought always to lie a-bed; but tells us, that "we must sometimes push the timorous out of bed, and rouse up the lazy."

When he found that diet and exercise were not sufficient to ease nature of a burden of corrupted humours, he was obliged to make use of other means, of which *purgation* was one. By this word he understood all the contrivances that are made use of to discharge the stomach and bowels; though it commonly signifies only the evacuation by the belly by stool. This evacuation he imagined to be occasioned by the purgative medicines attracting the humours to themselves. When first taken into the body, he thought they attracted that humour which was most similar to them, and then the others, one after another.—Most of the purgatives used in his time were emetics also, or at least were very violent in their operation downwards. These were the white and black hellebore; the first of which is now reckoned among the poisons. He used also the Cnidian berries, which are nothing else but the seeds of thymelea or chamælea; cneorum peplium, which is a sort of milk-thistle; thapsia; the juice of hippophaë, a sort of rhamnus; elaterium, or juice of the wild cucumber; flowers of brass, colocintida, scammony the magnesian stone, &c.

As these purgatives were all very strong, Hippocrates was extremely cautious in their exhibition. He did not prescribe them in the dog-days; nor did he ever purge women with child, and very seldom children or old people. He principally used purgatives in chronical distempers; but was much more wary in acute ones. In his books intitled "Of Epidemical Distempers," there are very few patients mentioned to whom he gave purgative medicines. He also takes notice expressly, that these medicines having been given in cases of the distempers of which he was treating, had produced very bad effects. We are not, however, from this to conclude, that Hippocrates absolutely condemned purging in acute distempers; for in some places he expressly mentions his having given them with success. He was of opinion, for instance, that purging was good in a pleurisy when the pain was seated below the diaphragm; and in this case he gave black hellebore, or some peplium mixed with the juice of *laserpitium*, which is supposed to have been our *asafætida*.

The principal rule Hippocrates gives with relation to purging is, that we ought only to purge off the humours that are concocted, and not those that are yet crude, taking particular care not to do it at the beginning of the distemper, lest the humours should be

Hippo-
crates.18
His maxims respecting exercise.19
His maxims respecting purgation.

Hippo-
crates.

be disturbed or stirred up, which happens pretty often. He was not, however, the first who remarked that it would be of ill consequence to stir the humours in the beginning of an acute distemper. The Egyptian physicians had before observed the same thing. By the beginning of a distemper, Hippocrates understood all the time from the first day to the fourth complete.

Hippocrates imagined that each purgative medicine was adapted to the carrying off some particular humour; and hence the distinction of purgatives into hydragogue, cholagogue, &c. which is now justly exploded. In consequence of this notion, which prevailed long after his time, he pretended that we knew if a purgative had drawn from the body what was fit to be evacuated according as we found ourselves well or ill upon it. If we found ourselves well, it was a sign that the medicine had effectually expelled the offending humour. On the contrary, if we were ill, he imagined, whatever quantity of humour came away, that the humour which caused the illness still remained; not judging of the goodness or badness of a purge by the quantity of matters that were voided by it, but by their quality and the effect that followed after it.

Vomits were also pretty much used as medicines by Hippocrates. We have already seen what those were which he prescribed to people in health by way of preventives. With regard to the sick, he sometimes advised them to the same, when his intentions were only to cleanse the stomach. But when he had a mind to recal the humours, as he termed it, from the inmost recesses of the body, he made use of brisker remedies. Among these was white hellebore; and this indeed he most frequently used to excite vomiting. He gave this root particularly to melancholy and mad people; and from the great use made of it in these cases by Hippocrates and other ancient physicians, the phrase *to have need of hellebore*, became a proverbial expression for being out of one's senses. He gave it also in defluxions, which come, according to him, from the brain, and throw themselves on the nostrils or ears, or fill the mouth with saliva, or that cause stubborn pains in the head, and a weariness or an extraordinary heaviness, or a weakness of the knees, or a swelling all over the body. He gave it to consumptive persons in broth of lentils, to such as were afflicted with the dropsy called *leucophlegmatia*, and in other chronical disorders. But we do not find that he made use of it in acute distempers, except in the cholera morbus, where he says he prescribed it with benefit. Some took this medicine fasting; but most took it after supper, as was commonly practised with regard to vomits taken by way of prevention. The reason why he gave this medicine most commonly after eating was, that by mixing with the aliments, its acrimony might be somewhat abated, and it might operate with less violence on the membranes of the stomach. With the same intention also he sometimes gave a plant called *sesamoides*, and sometimes mixed it with hellebore. Lastly, in certain cases he gave what he called *soft* or *sweet* hellebore. This term had some relation to the quality of the hellebore, or perhaps to the quantity he gave of it.

When Hippocrates intended only to keep the body open, or evacuate the contents of the intestines, he made use of simples; as for example, the herb mercury, or cabbage; the juice or decoction of which he

ordered to be drank. For the same purpose he used whey, and also cows and asses milk; adding a little salt to it, and sometimes letting it boil a little. If he gave asses milk alone, he caused a great quantity of it to be taken, so that it must of necessity loosen the body. In one place he prescribes no less than nine pounds of it to be taken as a laxative, but does not specify the time in which it was to be taken. With the same intention he made use of suppositories and clysters. The former were compounded of honey, the juice of the herb mercury, of nitre, powder of colocynth, and other sharp ingredients, to irritate the anus. These they formed into a ball, or into a long cylindrical mass like a finger. The clysters he made use of for sick people were sometimes the same with those already mentioned as preventives for people in health. At other times he mixed the decoction of herbs with nitre, honey, and oil, or other ingredients, according as he imagined he could by that means attract, wash, irritate, or soften. The quantity of liquor he ordered was about 36 ounces; from which it is probable he did not intend that it should all be used at one time.

On some occasions Hippocrates proposed to purge the head alone. This practice he employed, after purging the rest of the body, in an apoplexy, inveterate pains of the head, a certain sort of jaundice, a consumption, and the greatest part of chronic distempers. For that purpose he made use of the juices of several plants, as celery; to which he sometimes added aromatic drugs, making the patients snuff up this mixture into their nostrils. He used also powders compounded of myrrh, the flowers of brass, and white hellebore, which he caused them put up into the nose, to make them sneeze, and to draw the phlegm from the brain. For the same purpose also he used what he calls *tetragonon*, that is, "something having four angles;" but what this was, is now altogether unknown, and was so even in the days of Galen. The latter physician, however, conjectures it to be antimony, or certain flakes found in it.

In the distemper called *empyema* (or a collection of matter in the breast), he made use of a very rough medicine. He commanded the patient to draw in his tongue as much as he was able; and when that was done, he endeavoured to put into the hollow of the lungs a liquor that irritated the part, which, raising a violent cough, forced the lungs to discharge the purulent matter contained in them. The materials that he used for this purpose were of different sorts; sometimes he took the root of arum, which he ordered to be boiled with a little salt, in a sufficient quantity of water and oil; dissolving a little honey in it. At other times, when he intended to purge more strongly, he took the flowers of copper and hellebore; after that he shook the patient violently by the shoulders, the better to loosen the pus. This remedy, according to Galen, he received from the Cnidian physicians; and it has never been used by the succeeding ones, probably because the patients could not suffer it.

Blood-letting was another method of evacuation. His *maxima* pretty much used by Hippocrates. Another aim he *respecting* had in this, besides the mere evacuation, was to divert *blood let-* or recal the course of the blood when he imagined it *ting.* was going where it ought not. A third end of bleeding was to procure a free motion of the blood and spi-

Hippo-
crates.

tits, as we may gather from the following passage: "When any one becomes speechless of a sudden (says he), it is caused by the shutting of the veins, especially when it happens to persons otherwise in good health, without any outward violence. In this case the inward vein of the right-arm must be opened, and more or less blood taken away, according to the age or constitution of the patient. Those that lose their speech thus have great flushings in their face, their eyes are stiff, their arms are distended, their teeth gnash, they have palpitations of the arteries, cannot open their jaws, the extremities are cold, and the spirits are intercepted in the veins. If pain ensues, it is by the accession of the black bile and sharp humours. For the internal parts being vellicated or irritated by these humours, suffer very much; and the veins, being also irritated and dried, distend themselves extraordinarily, and are inflamed, and draw all that can flow to them; so that the blood corrupting, and the spirits not being able to pass through the blood by their ordinary passages, the parts grow cold by reason of this stagnation of the spirits. Hence come giddiness, loss of speech, and convulsions, if this disorder reaches to the heart, the liver, or to the great veins. From hence arise also epilepsies and palsies, if the defluxions fall upon the parts last mentioned; and that they dry up, because the spirits are denied a passage through them. In this case, after fomentation, a vein must be opened, while the spirits and humours are yet suspended and unsettled."

Hippocrates had also a fourth intention for bleeding, and this was refreshment. So in the iliac passion, he orders bleeding in the arm and in the head; to the end, says he, that the superior venter, or the breast, may cease to be overheated. With regard to this evacuation, his conduct was much the same as to purging, in respect of time and persons. We ought, says he, to let blood in acute diseases, when they are violent, if the party be lusty and in the flower of his age. We ought also to have regard to the time, both in respect to the disease and to the season in which we let blood. He also informs us, that blood ought to be let in great pains, and particularly in inflammations. Among these he reckons such as fall upon the principal viscera, as the liver, lungs, and spleen, as also the quinsy and pleurisy, if the pain of the latter be above the diaphragm. In these cases he would have the patients blooded till they faint, especially if the pain be very acute; or rather he advises that the orifice should not be closed till the colour of the blood alters, so that from livid it turn red, or from red livid. In a quinsy he blooded in both arms at once. Difficulty of breathing he also reckons among the distempers that require bleeding; and he mentions another sort of inflammation of the lungs, which he calls a swelling or tumor of the lungs arising from heat; in which case he advises to bleed in all parts of the body; and directs particularly to the arms, tongue, and nostrils. To make bleeding the more useful in all pains, he directed to open the vein nearest the part affected; in a pleurisy he directs to take blood from the arm of the side affected; and for the same reason, in pains of the head, he directs the veins of the nose and forehead to be opened. When the pain was not urgent, and bleeding was advised by way of prevention, he directed the blood to

be taken from the parts farthest off, with a design to divert the blood insensibly from the seat of pain. The highest burning fevers, which show neither signs of inflammation nor pain, he does not rank among those distempers that require bleeding. On the contrary, he maintains that a fever itself is in some cases a reason against bleeding. If any one, says he, has an ulcer in the head, he must bleed, *unless he has a fever*. He says further, those that lose their speech of a sudden must be blooded, unless they have a fever. Perhaps he was afraid of bleeding in fevers, because he supposed that they were produced by the bile and pituita, which grew hot, and afterwards heated the whole body, which is, says he, what we call *fever*, and which, in his opinion, cannot well be evacuated by bleeding. In other places also he looks upon the presence or abundance of bile to be an objection to bleeding; and he orders to forbear venesection even in a pleurisy, if there be bile. To this we must add, that Hippocrates distinguished very particularly between a fever which followed no other distemper, but was itself the original malady, and a fever which came upon inflammation. In the early ages of physic, the first were only properly called *fevers*: the others took their names from the parts affected; as *pleurisy*, *peripneumony*, *hepatitis*, *nephritis*, &c. which names signify that the pleura, the lungs, the liver, or the kidneys, are diseased, but do not intimate the fever which accompanies the disease. In this latter sort of fever Hippocrates constantly ordered bleeding, but not in the former. Hence, in his books Of Epidemic Distempers, we find but few directions for bleeding in the acute distempers, and particularly in the great number of continual and burning fevers there treated of. In the first and third book we find but one single instance of bleeding, and that in a pleurisy; in which, too, he staid till the eighth day of the distemper. Galen, however, and most other commentators on Hippocrates, are of opinion that he generally blooded his patients plentifully in the beginning of acute disorders, though he takes no notice of it in his writings. But had this been the case, he would not perhaps have had the opportunity of seeing so many fevers terminate by crises, or natural evacuations, which happen of themselves on certain days. Hippocrates, in fact, laid so much weight upon the assistance of nature and the method of diet, which was his favourite medicine, that he thought if they took care to diet the patients before mentioned, according to rule, they might leave the rest to nature. These are his principles, from which he never deviates; so that his pieces Of Epidemical Diseases seem to have been composed only with an intention to leave to posterity an exact model of management in pursuance of these principles.

With regard to the rules laid down by Hippocrates for bleeding, we must further take notice, that in all diseases which had their seat above the liver, he blooded in the arm, or in some of the upper parts of the body; but for those that were situated below it he opened the veins of the foot, ankle, or ham. If the belly was too laxative, and bleeding was at the same time thought necessary, he ordered the looseness to be stopped before bleeding.

Almost all these instances, however, regard scarce any thing but acute distempers; but we find several

Hippo-
crates.

Hippo-
crates.

concerning chronical diseases. "A young man complained of great pain in his belly, with a rumbling while he was fasting, which ceased after eating: this pain and rumbling continuing, his meat did him no good; but, on the contrary, he daily wasted and grew lean. Several medicines, as well purges as vomits, were given him in vain. At length it was resolved to bleed him by intervals, first in one arm and then in the other, till he had scarce any blood left, and by this method he was perfectly cured."

Hippocrates let blood also in a dropsy, even in a tympany; and in both cases he prescribes bleeding in the arm. In a disease occasioned by an overgrown spleen, he proposes bleeding several times repeated at a vein of the arm which he calls the *splenic*; and in a kind of jaundice, he proposes bleeding under the tongue. On some occasions he took away great quantities of blood, as appears from what we have already observed. Sometimes he continued the bleeding till the patient fainted: at other times he would bleed in both arms at once; at others, he did it in several places of the body, and at several times. The veins he opened were those of the arm, the hands, the ankles on both sides, the hams, the forehead, behind the head, the tongue, the nose, behind the ears, under the breasts, and those of the arms; besides which, he burnt others, and opened several arteries. He likewise used cupping-vessels, with intent to recal or withdraw the humours which fell upon any part. Sometimes he contented himself with the bare attraction made by the cupping-vessels, but sometimes also he made scarifications.

21 His maxims
respecting
diuretics
and sudori-
fics. When bleeding and purging, which were the principal and most general means used by Hippocrates for taking off a plethora, proved insufficient for that purpose, he had recourse to diuretics and sudorifics. The former were of different sorts, according to the constitution of the persons: sometimes baths, and sometimes sweet wine, were employed to provoke urine; sometimes the nourishment which we take contributes to it: and amongst those herbs which are commonly eaten, Hippocrates recommends garlic, leeks, onions, cucumbers, melons, gourds, fennel, and all other things which have a biting taste and a strong smell. With these he numbers honey, mixed with water or vinegar, and all salt meats. But, on some occasions, he took four cantharides, and, pulling off their wings and feet, gave them in wine and honey. These remedies were given in a great number of chronical distempers after purging, when he thought the blood was overcharged with a sort of moisture which he calls *ichor*; or in suppressions of urine, and when it was made in less quantity than it ought. There were also some cases in which he would force sweat as well as urine; but he neither mentions the diseases in which sudorifics are proper, nor lets us know what medicines are to be used for this purpose, except in one single passage, where he mentions sweating, by pouring upon the head a great quantity of water till the feet sweat; that is, till the sweat diffuses itself over the whole body, running from head to foot. After this he would have them eat boiled meat, and drink pure wine, and being well covered with clothes, lay themselves down to rest. The disease for which he proposes the above mentioned remedy is a fever; which is not, according to him,

produced by bile or pituita, but by mere lassitude, or some other similar cause; from whence we may conclude that he did not approve of sweating in any other kind of fever.

Other remedies which Hippocrates tells us he made use of were those that purged neither bile nor phlegm, but act by cooling, drying, heating, moistening, or by closing and thickening, resolving and dissipating. These medicines, however, he does not particularly mention; and it is probable they were only some particular kinds of food. To these he joined *hypnotics*, or such things as procure sleep; but these last were used very seldom, and, it is most probable, were only different preparations of poppies.

Lastly, besides the medicines already mentioned, which acted in a sensible manner, Hippocrates made use of others called *specifics*; whose action he did not understand, and for the use of which he could give no reason besides his own experience, or that of other physicians. These he had learned from his predecessors the descendants of *Æsculapius*, who, being *empirics*, did not trouble themselves about inquiring into the operation of their remedies, provided their patients were cured.

Of the external remedies prescribed by Hippocrates, fomentations were the chief. These were of two kinds. The one was a sort of bath, in which the patient sat in a vessel full of a decoction of simples appropriated to his malady; so that the part affected was soaked in the decoction. This was chiefly used in distempers of the womb, of the arms, the bladder, the reins, and generally all the parts below the diaphragm. The second way of fomenting was, to take warm water and put it into a skin or bladder, or even into a copper or earthen vessel, and to apply it to the part affected; as, for example, in a pleurisy. They used likewise a large sponge, which they dipped in the water, or other hot liquor, and squeezed out part of the liquor before they applied it. The same use they made of barley, vetches, or bran, which were boiled in some proper liquor, and applied in a linen bag. These are called *moist fomentations*. The dry ones were made of salt or millet, heated considerably, and applied to the part. Another kind of fomentation was the vapour of some hot liquor; an instance of which we find in his first book of *Womens Distempers*. He cast, at several times, bits of red-hot iron into urine, and, covering up the patient close, caused her to receive the steam below. His design in these kinds of fomentations was to warm the part, to resolve or dissipate, and draw out the peccant matter, to mollify and assuage pain, to open the passages, or even to shut them, according as the fomentations were emollient or astringent.

Fumigations were likewise very often used by Hippocrates. In the quinsy, he burned hyssop with sulphur and pitch, and caused the smoke to be drawn into the throat by a funnel; and by this means he brought away abundance of phlegm through the mouth and through the nose. For this purpose he took nitre, marjoram, and cress-seeds, which he boiled in water, vinegar, and oil, and, while it was on the fire, caused the patient to draw in the steam by a pipe. In his works we find a great number of fumigants for the distempers of women, to promote the menstrual flux.

Hippo-
crates.22
The use he
made of spe-
cifics.23
His exter-
nal applica-
tions.24
Fomenta-
tions.25
Fumiga-
tions.

Hippo-
crates.

flux, to check it, to help conception, and to ease pains in the matrix, or the suffocation of it. On these occasions he used such aromatics as were then known, viz. cinnamon, cassia, myrrh, and several odoriferous plants; likewise some minerals, such as nitre, sulphur, and pitch, and caused them to receive the vapours through a funnel into the uterus.

26
Gargles.

Gargles, a kind of fomentations for the mouth, were also known to Hippocrates. In the quinsy he used a gargle made of marjoram, savory, celery, mint, and nitre, boiled with water and a little vinegar. When this was strained, they added honey to it, and washed their mouths frequently with it.

27
Oils and
ointments.

Oils and ointments were likewise much used by Hippocrates, with a view to mollify and abate pain, to ripen boils, resolve tumors, refresh after weariness, make the body supple, &c. For this purpose, sometimes pure oil of olives was used; sometimes certain simples were infused in it, as the leaves of myrtle and roses; and the latter kind of oil was in much request among the ancients. There were other sorts of oils sometimes in use, however, which were much more compounded. Hippocrates speaks of one called *susinum*, which was made of the flowers of the iris, of some aromatics, and of an ointment of narcissus made with the flowers of narcissus and aromatics infused in oil. But the most compounded of all his ointments was that called *netopum*, which he made particularly for women; and consisted, according to Hesychius, of a great number of ingredients. Another ointment, to which he gave the name of *ceratum*, was composed of oil and wax. An ointment which he recommends for the softening of a tumor, and the cleansing of a wound, was made by the following receipt: "Take the quantity of a nut of the marrow or fat of a sheep, of mastic or turpentine the quantity of a bean, and as much wax; melt these over a fire, with oil of roses, for a *ceratum*." Sometimes he added pitch and wax, and, with a sufficient quantity of oil, made a composition somewhat more consistent than the former, which he called *cerapissus*.

28
Cataplasms.

Cataplasms were a sort of remedies less consistent than the two former. They were made of powders or herbs steeped or boiled in water or some other liquor, to which sometimes they added oil. They were used with a view to soften or resolve tumors, ripen abscesses, &c. though they had also cooling cataplasms made of the leaves of beets or oak, fig or olive-trees, boiled in water.

29
Collyria.

Lastly, to complete the catalogue of the external remedies used by Hippocrates, we shall mention a sort of medicine called *collyrium*. It was compounded of powders, to which was added a small quantity of some ointment, or juice of a plant, to make a solid or dry mass; the form of which was long and round, which was kept for use. Another composition of much the same nature was a sort of lozenge of the bigness of a small piece of money, which was burnt upon coals for a perfume, and powdered for particular uses. In his works we find likewise descriptions of powders for several uses, to take off fungous flesh, and to blow into the eyes in ophthalmies, &c.

These were almost all the medicines used by Hippocrates for external purposes. The compound medicines given inwardly were either liquid, solid, or lambative. The liquid ones were prepared either by

decoction or infusion in a proper liquor, which, when strained, was kept for use; or by macerating certain powders in such liquors, and so taking them together, or by mixing different kinds of liquors together. The solid medicines consisted of juices inspissated; of gums, resins, or powders, made up with them or with honey, or something proper to give the necessary consistence to the medicine. These were made up in a form and quantity fit to be swallowed with ease. The lambative was of a consistence between solid and fluid; and the patients were obliged to keep it for some time to dissolve in the mouth, that they might swallow it leisurely. This remedy was used to take off the acrimony of those humours which sometimes fall upon this part, and provoke coughing and other inconveniences. The basis of this last composition was honey. It is worth our observation, that the compound medicines of Hippocrates were but very few, and composed only of four or five ingredients at most; and that he not only understood pharmacy, or the art of compounding medicines, but prepared such as he used himself, or caused his servants prepare them in his house by his directions.

We have thus given some account of the state of medicine as practised and taught by Hippocrates, who, as we have already observed, has for many ages been justly considered as the father of physic. For when we attend to the state in which he found medicine, and the condition in which he left it, we can hardly bestow sufficient admiration on the judgment and accuracy of his observations. After a life spent in unwearied industry, he is said to have died at Larissa, a city in Thessaly, in the 101st year of his age, 361 years before the birth of Christ.

After the days of Hippocrates, medicine in ancient Greece gradually derived improvement from the labour of other physicians of eminence. And we may particularly mention three to whom its future progress seems to have been not a little indebted, viz. Praxagoras, Erasistratus, and Herophilus.

The first physician of eminence who differed considerably in his practice from Hippocrates was Praxagoras. Cælius Aurelianus acquaints us, that he made great use of vomits in his practice, insomuch as to exhibit them in the iliac passion till the excrements were discharged by the mouth. In this distemper he also advised, when all other means failed, to open the belly, cut the intestine, take out the indurated fæces, and then to sew up all again; but this practice has not probably been followed by any subsequent physician.

Erasistratus was a physician of great eminence, and flourished in the time of Seleucus, one of the successors of Alexander the Great. According to Galen, he entirely banished venesection from medicine; though some affirm that he did not totally discard it, but only used it less frequently than other physicians. His reasons for disapproving of venesection are as follow: It is difficult to succeed in venesection, because we cannot always see the vein we intend to open, and because we are not sure but we may open an artery instead of a vein. We cannot ascertain the true quantity to be taken. If we take too little, the intention is by no means answered: if we take too much, we run a risk of destroying the patient. The evacuation of the venous blood also is

Hippo-
crates.30
Praxagoras.31
Erasistratus.

Erasistratus succeeded by that of the spirits, which on that occasion pass from the arteries into the veins. It must likewise be observed, that as the inflammation is formed in the arteries by the blood coagulated in their orifices, venesection must of course be useless and of no effect.

As Erasistratus did not approve of venesection, so neither did he of purgatives, excepting very rarely, but exhibited clysters and vomits; as did also his master Chrysippus. He was of opinion, however, that the clysters should be mild; and condemned the large quantity and acrid quality of those used by the ancients. The reason why purgatives were not much used by him was, that he imagined purging and venesection could answer no other purpose than diminishing the fulness of the vessels; and for this purpose he asserted that there were more effectual means than either phlebotomy or purging. He asserted that the humours discharged by cathartics were not the same in the body that they appeared after the discharge; but that the medicines changed their nature, and produced a kind of corruption in them. This opinion has since been embraced by a great number of physicians. He did not believe that purgatives acted by attraction; but substituted in the place of this principle what Mr Le Clerc imagines to be the same with Aristotle's *fuga vacui*. The principal remedy substituted by him in place of purging and venesection was abstinence. When this, in conjunction with clysters and vomits, was not sufficient to eradicate the disease, he then had recourse to exercise. All this was done with a view to diminish the plenitude, which, according to him, was the most frequent cause of all diseases. Galen also informs us, that Erasistratus had so great an opinion of the virtues of succory in diseases of the viscera and lower belly, and especially in those of the liver, that he took particular pains to describe the method of boiling it, which was, to boil it in water till it was tender; then to put it into boiling water a second time, in order to destroy its bitterness; afterwards to take it out of the water, and preserve it in a vessel with oil; and lastly, when it is to be used, add a little weak vinegar to it. Nay, so minute and circumstantial was Erasistratus with regard to the preparation of his favourite succory, that he gave orders to tie several of the plants together, because that was the more commodious method of boiling them. The rest of Erasistratus's medicines consisted almost entirely of regimen; to which he added some topical remedies, such as cataplasms, fomentations, and unctions. In short, as he could neither endure compounded medicines, nor superstitious and fine-spun reasonings, he reduced medicine to a very simple and compendious art.

With regard to surgery, Erasistratus appears to have been very bold; and as an anatomist he is said to have been exceedingly cruel, inasmuch that he is represented by some as having dissected criminals while yet alive*. In a scirrhus liver, or in tumors of that organ, Cœlius Aurelianus observes, that Erasistratus made an incision through the skin and integuments, and having opened the abdomen he applied medicines immediately to the part affected. But tho' he was thus bold in performing operations on the liver, yet he did not approve of the paracentesis or tapping in the dropsy; because (said he) the waters being eva-

uated, the liver, which is inflamed and become hard like a stone, is more pressed by the adjacent parts which the waters kept at a distance from it, so that by this means the patient dies. He declared also against drawing teeth which were not loose; and used to tell those who talked with him on this operation, That in the temple of Apollo there was to be seen an instrument of lead for drawing teeth; in order to insinuate that we must not attempt the extirpation of any but such as are loose, and call for no greater force for their extirpation than what may be supposed in an instrument of lead.

Herophilus, the disciple of Praxagoras, and cotemporary of Erasistratus, followed a less simple practice: he made so great use of medicines both simple and compound, that neither he nor his disciples would undertake the cure of any disorder without them. He seems also to have been the first who treated accurately of the doctrine of pulses, of which Hippocrates had but a superficial knowledge. Galen, however, affirms, that on this subject he involved himself in difficulties and advanced absurdities; which indeed we are not greatly to wonder at, considering the time in which he lived. He took notice of a disease at that time pretty rare, and to which he ascribes certain sudden deaths. He calls it a *palsy of the heart*; and perhaps it may be the same disease with what is now termed the *angina pectoris*.

According to Celsus, it was about this time that medicine was first divided into three branches, viz. the dietetic, the pharmaceutical, and the surgical medicine. The first of these employed a proper regimen in the cure of diseases; the second, medicines; and the third, the operation of the hands: and the same author informs us, that these three branches became now the business of as many distinct classes of men; so that from this time we may date the origin of the three professions of physicians, apothecaries, and surgeons.—Before this division, those called *physicians* discharged all the several offices belonging to the three professions; and there were only two kinds of them, viz. one called *αρχιτεκτονικοι*, who only gave their advice to the patients, and directions to those of an inferior class, who were called *δημιουργοι*, and worked with their hands either in the performing operations, or in the composition and application of remedies.

The first grand revolution which happened in the medicinal art after the days of Herophilus and Erasistratus was occasioned by the founding of the empiric sect by Serapion of Alexandria about 287 years before Christ. The division into dogmatists and empirics had indeed subsisted before; but about this time the latter party began to grow strong, and to have champions publicly asserting its cause. Galen informs us, that Serapion used Hippocrates very ill in his writings, in which he discovered an excess of pride, self-sufficiency, and contempt for all the physicians that went before him. We have some sketches of his practice in Cœlius Aurelianus, from which we may infer that he retained the medicines of Hippocrates and the other physicians who went before him, tho' he rejected their reasoning. We know not what arguments he advanced for the support of his sentiments, since his works are lost, as well as those of the other empirics; and we should know nothing at all of any

* See Anatomy, Hist.

Erasistratus.

32
Herophilus.

33
The Empirics.

34
Serapion.

of

Serapion.

of them, if their adversaries had not quoted them in order to confute them.

The empirics admitted only one general method of obtaining skill in the medical art, which was by experience, called by the Greeks *εμπειρία*. From this word they took their name, and refused to be called after the founder or any champion of their sect. They defined experience a knowledge derived from the evidence of sense. It was either fortuitous, or acquired by design. For acquiring practical skill they recommended what they called *τηνσις*, or one's own observation, and the reading of histories or cases faithfully related by others. Hence they thought that we are enabled to know a disease by its resemblance to others; and, when new diseases occurred, to conclude what was proper to be done from the symptoms they had in common with others that were before known. They asserted, that observation ought principally to be employed in two different ways; first in discovering what things are salutary, and what are of an indifferent nature; and, secondly, what particular disease is produced by a certain concurrence of symptoms; for they did not call every symptom a disease, but only such a combination of them as from long experience they found to accompany each other, and produced such disorders as began and terminated in the same manner.

On the other hand, the dogmatist affirmed, that there was a necessity for knowing the latent as well as the evident causes of diseases, and that the physician ought to understand the natural actions and functions of the human body, which necessarily presupposes a knowledge of the internal parts. By secret or latent causes they meant such as related to the elements or principles of which our bodies are composed, and which are the origin of a good or bad state of health. They asserted that it was impossible to know how to cure a disease without knowing the cause whence it proceeded; because undoubtedly it behoved them to vary prodigiously in themselves according to the different causes by which they were produced.

35
Asclepi-
ades.

The next remarkable person in the history of physic is Asclepiades, who flourished in the century immediately preceding the birth of Christ. He introduced the philosophy of Democritus and Epicurus into medicine, and ridiculed the doctrines of Hippocrates. He asserted, that matter considered in itself was of an unchangeable nature; and that all perceptible bodies were composed of a number of smaller ones, between which there were interspersed an infinity of small spaces totally void of all matter. He thought that the soul itself was composed of these small bodies. He laughed at the principle called *Nature* by Hippocrates, and also at the imaginary faculties said by him to be subservient to her; and still more at what he called *Attraction*. This last principle Asclepiades denied in every instance, even in that of the loadstone and steel, imagining that this phenomenon proceeded from a concurrence of corpuscles, and a particular disposition or modification of their pores. He also maintained, that nothing happened or was produced without some cause; and that what was called *nature* was in reality no more than *matter* and *motion*. From this last principle he inferred that Hippocrates knew not what he said when he spoke of *Nature* as an intelligent being,

N° 202.

and ascribed qualities of different kinds to her. For the same reason he ridiculed the doctrine of Hippocrates with regard to crises; and asserted that the termination of diseases might be as well accounted for from mere matter and motion. He maintained, that we were deceived if we imagined that nature always did good; since it was evident that she often did a great deal of harm. As for the days particularly fixed upon by Hippocrates for crises, or those on which we usually observe a change either for the better or the worse, Asclepiades denied that such alterations happened on those days rather than on others. Nay, he asserted that the crisis did not happen at any time of its own accord, or by the particular determination of nature for the cure of the disorder, but that it depended rather on the address and dexterity of the physician; that we ought never to wait till a distemper terminates of its own accord, but that the physician by his care and medicines must hasten on and advance the cure.—According to him, Hippocrates and other ancient physicians attended their patients rather with a view to observe in what manner they died than in order to cure them; and this under pretence that Nature ought to do all herself, without any assistance.

According to Asclepiades, the particular assemblage of the various corpuscles abovementioned, and represented as of different figures, is the reason why there are several pores or interstices within the common mass, formed by these corpuscles; and why these pores are of a different size. This being taken for granted, as these pores are in all the bodies we observe, it must of course follow that the human body has some peculiar to itself, which, as well as those of all other bodies, contain other minute bodies, which pass and repass by those pores that communicate with each other; and as these pores or interstices are larger or smaller, so the corpuscles which pass through them differ proportionably as to largeness and minuteness. The blood consists of the largest of these corpuscles, and the spirits, or the heat, of the smallest.

From these principles he infers, that as long as the corpuscles are freely received by the pores, the body remains in its natural state; and on the contrary, it begins to recede from that state, when the corpuscles find any obstacle to their passage. Health therefore depends on the just proportion between the pores and the corpuscles—they are destined to receive and transmit; as diseases, on the contrary, proceed from a disproportion between these pores and the corpuscles. The most usual obstacle on this occasion proceeds from the corpuscles embracing each other, and being retained in some of their ordinary passages, whether these corpuscles arrive in too large a number, are of irregular figures, move too fast or too slow, &c.

Among the disorders produced by the corpuscles stopping of their own accord, Asclepiades reckoned phrenies, lethargies, pleurifies and burning fevers. Pains, in particular, are classed among the accidents which derive their origin from a stagnation of the largest of all the corpuscles of which the blood consists. Among the disorders produced by the bad state and disposition of the pores, he placed deliquiums, languors, extenuations, leanness, and dropsies. These last disorders he thought proceeded from the pores being too much relaxed and opened: the dropsy in par-

Asclepi-
ades.

^{Asclepiades} particular, he thinks, proceeds from the flesh being perforated with various small holes, which convert the nourishment received into them into water. Hunger, and especially that species of it called *fames canina*, proceeds from an opening the of large pores of the stomach and belly; and thirst from an opening of their small ones. Upon the same principles he accounted for intermittent fevers. Quotidian fevers are caused by a retention of the largest corpuscles, those of the tertian kind by a retention of corpuscles somewhat smaller, and quartan fevers are produced by a retention of the smallest corpuscles of all.

The practice of Asclepiades was suited to remove these imaginary causes of disorders. He composed a book concerning common remedies, which he principally reduced to three, *vis.* gestation, friction, and the use of wine. By various exercises he proposed to render the pores more open, and to make the juices and small bodies, which cause diseases by their retention, pass more freely; and while the former physicians had not recourse to gestation till towards the end of long continued disorders, and when the patients, tho' entirely free from fever, were yet too weak to take sufficient exercise by walking, Asclepiades used gestation from the very beginning of the most burning fevers. He laid it down as a maxim, that one fever was to be cured by another; that the strength of the patient was to be exhausted by making him watch and endure thirst to such a degree, that, for the two first days of the disorder, he would not allow them to cool their mouths with a drop of water. Celsus also observes, that though Asclepiades treated his patients like a butcher during the first days of the disorder, he indulged them so far afterwards as even to give directions for making their beds in the softest manner. On several occasions Asclepiades used frictions to open the pores. The dropsy was one of the distempers in which this remedy was used; but the most singular attempt was, by this means, to lull phrenetic patients asleep. But though he enjoined exercise so much to the sick, he denied it to those in health; a piece of conduct not a little surprising and extraordinary. He allowed wine freely to patients in fevers, provided the violence of the distemper was somewhat abated. Nor did he forbid it to those who were afflicted with a phrenzy: nay, he ordered them to drink it till they were intoxicated, pretending by that means to make them sleep; because, he said, wine had a narcotic quality and procured sleep, which he thought absolutely necessary for those who laboured under that disorder. To lethargic patients he used it on purpose to excite them, and rouse their senses: he also made them smell strong-scented substances, such as vinegar, castor, and rue, in order to make them sneeze; and applied to their heads cataplasms of mustard made up with vinegar.

Besides these remedies, Asclepiades enjoined his patients abstinence to an extreme degree. For the first three days, according to Celsus, he allowed them no aliment whatever; but on the fourth began to give them victuals. According to Cælius Aurelianus, however, he began to nourish his patients as soon as the accession of the disease was diminished, not waiting till an entire remission; giving to some aliments on the first, to others on the second, to others on the third, and so on to the seventh day. It seems almost incredible to us, that people should be able to fast till

Vol. XI. Part I.

this last mentioned term; but Celsus assures us, that ^{Asclepiades} abstinence till the seventh day was enjoined by the predecessors of Asclepiades, and by Heraclides Tarentinus.

The next great revolution which happened in the medicinal art, was brought about by Themison, the disciple of Asclepiades, who lived not long before the time of Celsus, during the end of the reign of Augustus, or beginning of that of Tiberius. The sect founded by him was called ³⁶ *methodic*, because he endeavoured to find a method of rendering medicine more ^{Methodic} easy than formerly.

He maintained, that a knowledge of the causes of ³⁷ *Themison* diseases was not necessary, provided we have a due regard to what diseases have in common and analogous to one another. In consequence of this principle, he divided all diseases into two, or at most three, kinds. The first included diseases arising from stricture; the second, those arising from relaxation; and the third, those of a mixed nature, or such as partook both of stricture and relaxation.

Themison also asserted, that diseases are sometimes acute, and sometimes chronical; that for a certain time they increase; that at a certain time they are at their height; and that at last they were observed to diminish. Acute diseases, therefore, according to him, must be treated in one way, and chronical ones in another; one method must be followed with such as are in their augmentation, another with such as are at their height, and a third with such as are in their declension. He asserted, that the whole of medicine consisted in the observation of that small number of rules which are founded upon things altogether evident. He said, that all disorders, whatever their nature was, if included under any of the kinds above mentioned, ought to be treated precisely in the same way, in whatever country and with whatever symptoms they happen to arise. Upon these principles, he defined medicine to be a method of conducting to the knowledge of what diseases have in common with each other, and which at the same time is evident.

Themison was old when he laid the foundation of the *Methodic* sect; and it was only brought to perfection by ³⁸ *Thessalus*, who lived under the emperor Nero. Galen and Pliny accuse this physician of intolerable insolence and vanity, and report that he gave himself the air of despising all other physicians; and so intolerable was his vanity, that he assumed the title of *the conqueror of physicians*, which he caused to be put upon his tomb in the Appian way. Never was mountebank (says Pliny) attended by a greater number of spectators than Thessalus had generally about him; and this circumstance is the less to be wondered at, if we consider that he promised to teach the whole art of medicine in less than six months. In reality, the art might be learned much sooner if it comprehended no more than what the methodists thought necessary: for they cut off the examination of the causes of diseases followed by the dogmatics; and substituted in the room of the laborious observations of the empirics, indications drawn from the analogy of diseases, and the mutual resemblance they bear to each other. The most skilful of all the methodic sect, and he who put the last hand to it, was Soranus. He lived under the emperors ³⁹ *Soranus*, Trajan and Adrian, and was a native of Ephesus.

One of the most celebrated medical writers of antiquity ⁴⁰ *Celsus*.

Celsus.

tiquity was Celsus, whom we have already had occasion to mention. Most writers agree that he lived in the time of Tiberius, but his country is uncertain. It is even disputed whether or not he was a professed physician. Certain it is, however, that his books on medicine are the most valuable of all the ancients next to those of Hippocrates. From the latter, indeed, he has taken so much, as to acquire the name of the *Latin Hippocrates*; but he has not attached himself to him so closely as to reject the assistance of other authors. In many particulars he has preferred Asclepiades. With him he laughs at the critical days of Hippocrates, and ascribes the invention of them to a foolish and superstitious attachment to the Pythagorean doctrine of numbers. He also rejected the doctrine of Hippocrates with regard to venesection, of which he made a much more general use; but did not take away so much at a time, thinking it much better to repeat the operation than weaken the patient by too great an evacuation at one time. He used cupping also much more frequently, and differed from him with regard to purgatives. In the beginning of disorders, he said, the patients ought to endure hunger and thirst: but afterwards they were to be nourished with good aliments; of which, however, they were not to take too much, nor fill themselves all of a sudden, after having fasted. He does not specify how long the patient ought to practise abstinence; but affirms, that in this particular it is necessary to have a regard to the disease, the patient, the season, the climate, and other circumstances of a like nature. The signs drawn from the pulse he looked upon to be very precarious and uncertain. "Some (says he) lay great stress upon the beating of the veins or the arteries; which is a deceitful circumstance, since that beating is slow or quick, and varies very much, according to the age, sex, and constitution of the patient. It even sometimes happens that the pulse is weak and languid when the stomach is disordered, or in the beginning of a fever, though in other respects the body be in a good state; so that we might, in this latter case, be induced to believe, that a man is very weak, when he is just entering into a violent paroxysm, has strength enough left, and may be easily recovered from it. On the contrary, the pulse is often high, and in a violent commotion, when one has been exposed to the sun, or comes out of a bath, or from using exercise; or when one is under the influence of anger, fear, or any other passion. Besides, the pulse is easily changed by the arrival of the physician, in consequence of the patient's anxiety to know what judgement he will pass upon his case. To prevent this, the physician must not feel the patient's pulse on his first arrival: he must first sit down by him, assume a cheerful air, inform himself of his condition; and if he is under any dread, endeavour to remove it by encouraging discourse; after which he may examine the beating of the artery. This nevertheless does not hinder us from concluding, that if the sight of the physician alone can produce so remarkable a change in the pulse, a thousand other causes may produce the same effect." But although Celsus thought for himself, and in not a few particulars differed from his predecessors, yet in his writings, which are not only still preserved, but have gone through almost innumerable editions, we have a compendious view of the practice of almost all his predecessors: and he treats

of the healing art in all its branches, whether performed *manu, visu, vel medicamentis*. His writings, therefore, will naturally be had recourse to by every one who wishes either to become acquainted with the practice of the ancients prior to the fall of the Roman empire, or to read medical Latin in its greatest purity.

About the 131st year after Christ, in the reign of Galen.⁴¹ the emperor Adrian, lived the celebrated Galen, a native of Pergamus, whose name makes such a conspicuous figure in the history of physic. At this time the dogmatic, empiric, methodic, and other sects, had each their abettors. The methodics were held in great esteem, and looked upon to be superior to the dogmatics, who were strangely divided among themselves, some of them following Hippocrates, others Erasistratus, and others Asclepiades. The empirics made the least considerable figure of any. Galen undertook the reformation of medicine, and restored dogmatism. He seems to have been of that sect which was called *eclectic*, from their choosing out of different authors what they esteemed good in them, without being particularly attached to any one more than the rest. This declaration he indeed sets out with; but, notwithstanding this, he follows Hippocrates much more than any of the rest, or rather follows nobody else but him. Though before his time several physicians had commented on the works of Hippocrates, yet Galen pretends that none of them had understood his meaning. His first attempt therefore was to explain the works of Hippocrates; with which view he wrote a great deal, and after this set about composing a system of his own. In one of his books entitled, "Of the establishment of medicine," he defines the art to be one which teaches to preserve health and cure diseases. In another book, however, he proposes the following definition: "Medicine (says he) is a science which teaches what is sound, and what is not so; and what is of an indifferent nature, or holds a medium between what is sound and what is the reverse." He affirmed, that there are three things which constitute the object of medicine, and which the physician ought to consider as sound, as not sound, or of a neutral and indifferent nature. These are the body itself, the signs, and the causes. He esteems the human body sound, when it is in a good state or habit with regard to the simple parts of which it is composed, and when besides there is a just proportion between the organs formed of these simple parts. On the contrary, the body is reckoned to be unsound, when it recedes from this state, and the just proportion above mentioned. It is in a state of neutrality or indifference, when it is in a medium between soundness and its opposite state. The salutary signs are such as indicate present health, and prognosticate that the man may remain in that state for some time to come. The insalubrious signs, on the contrary, indicate a present disorder, or lay a foundation for suspecting the approach of one. The neutral signs, or such as are of an indifferent nature, denote neither health nor indisposition, either for the present, or for the time to come. In like manner he speaks of causes salutary, unsalutary, and indifferent.

These three dispositions of the human body, that is, soundness, its reverse, and a neutral state, comprehend all the differences between health and disorder or indispo-

Galen.

disposition: and each of these three states or dispositions has a certain extent peculiar to itself. A sound habit of body, according to the definition of it already given, is very rare, and perhaps never to be met with; but this does not hinder us to suppose such a model for regulating our judgment with respect to different constitutions. On this principle Galen establishes eight other principal constitutions, all of which differ more or less from the perfect model abovementioned. The four first are such as have one of the four qualities of hot, cold, moist, or dry, prevailing in too great a degree; and accordingly receive their denomination from that quality which prevails over the rest. The four other species of constitutions receive their denominations from a combination of the abovementioned; so that, according to his definition, there may be a hot and dry, a hot and moist, a cold and moist, and a cold and dry, constitution. Besides these differences, there are certain others which result from occult and latent causes, and which, by Galen, are said to arise from an *idiosyncrasy* of constitution. It is owing to this idiosyncrasy that some have an aversion to one kind of aliment and some to another; that some cannot endure particular smells, &c. But though these eight last-mentioned constitutions fall short of the perfection of the first, it does not thence follow, that those to whom they belong are to be classed among the valetudinary and diseased. A disease only begins when the deviation becomes so great as to hinder the action of the parts.

Galen describes at great length the signs of a good or bad constitution, as well as those of what he calls a *neutral habit*. These signs are drawn from the original qualities of cold, hot, moist, and dry, and from their just proportion or disproportion with respect to the bulk, figure, and situation, of the organical parts. With Hippocrates he establishes three principles of an animal body; the parts, the humours, and the spirits. By the parts he properly meant no more than the solid parts; and these he divided into similar and organical. Like Hippocrates, he also acknowledged four humours; the blood, the phlegm, the yellow bile and black bile. He established three different kinds of spirits; the vital, the animal, and the natural. The first of these are, according to him, nothing else but a subtle vapour arising from the blood, which draws its origin from the liver, the organ or instrument of sanguification. After these spirits are conveyed to the heart, they, in conjunction with the air we draw into the lungs, become the matter of the second species, that is, of the vital spirits, which are again changed into those of the animal kind in the brain. He supposed that these three species of spirits served as instruments to three kinds of faculties, which reside in the respective parts where these faculties are formed. The natural faculty is the first of these, which he placed in the liver, and imagined to preside over the nutrition, growth, and generation, of the animal. The vital faculty he lodged in the heart, and supposed that by means of the arteries it communicated warmth and life to all the body. The animal faculty, the noblest of all the three, and with which the reasoning or governing faculty was joined, according to him, has its seat in the brain; and, by means of the nerves, distributes a power of motion and sensation to all the parts, and presides over all the other faculties. The

original source or principle of motion in all these faculties, Galen, as well as Hippocrates, defines to be *Nature*.

Galen.

Upon these principles Galen defined a disease to be "such a preternatural disposition or affection of the parts of the body, as primarily, and of itself, hinders their natural and proper action." He established three principal kinds of diseases: the first relates to the similar parts; the second, to the organical; and the third is common to both these parts. The first kind of diseases consists in the intemperature of the similar parts; and this is divided into an intemperature *without matter*, and an intemperature *with matter*. The first discovers itself when a part has more or less heat or cold than it ought to have without that change of quality in the part being supported and maintained by any matter. Thus, for instance, a person's head may be overheated and indisposed by being exposed to the heat of the sun, without that heat being maintained by the continuance or congestion of any hot humour in the part. The second sort of intemperature is when any part is not only rendered hot or cold, but also filled with a hot or cold humour, which are the causes of the heat or cold felt in the part. Galen also acknowledged a simple intemperature: that is, when one of the original qualities, such as heat or cold, exceeds alone and separately; and a compound intemperature, when two qualities are joined together, such as heat and dryness, or coldness and humidity. He also established an equal and unequal temperature. The former is that which is equally in all the body, or in any particular part of it, and which creates no pain, because it is become habitual, such as dryness in the hectic constitution. The latter is distinguished from the former, in that it does not equally subsist in the whole of the body, or in the whole of a part. Of this kind of intemperature we have examples in certain fevers, where heat and cold, equally, and almost at the same time, attack the same part; or in other fevers, which render the surface of the body cold as ice, while the internal parts burn with heat; or lastly, in cases where the stomach is cold and the liver hot.

The second kind of disorders, relating to the organical parts, results from irregularities of these parts, with respect to the number, bulk, figure, situation, &c.; as when one has six fingers, or only four; when one has any part larger or smaller than it ought to be, &c. The third kind, which is common both to the similar and the organical parts, is a solution of continuity, which happens when any similar or compound part is cut, bruised, or corroded.

Like Hippocrates, Galen distinguished diseases into acute and chronical; and, with respect to their nature and genius, into benign and malignant; also into epidemic, endemic, and sporadic.

After having distinguished the kinds of diseases, Galen comes to explain the causes; which he divides into external and internal. The external causes of diseases, according to him, are six things, which contribute to the preservation of health when they are well disposed and properly used, but produce a contrary effect when they are imprudently used or ill disposed. These six things are, the air, aliments and drink, motion and rest, sleeping and watching, retention and excretion, and lastly the passions. All these are called the *procatartic* or *beginning* causes, because they put

Galen.

in motion the internal causes; which are of two kinds, the *antecedent* and the *conjunct*. The former is discovered only by reasoning; and consists for the most part in a peccancy of the humours, either by plenitude or cacochymy, *i. e.* a bad state of them. When the humours are in too large a quantity, the case is called a *plethora*; but we must observe, that this word equally denotes too large a quantity of all the humours together, or a redundancy of one particular humour which prevails over the rest. According to these principles, there may be a sanguine, a bilious, a pituitous, or a melancholy plenitude: but there is this difference between the sanguine and the three other plenitudes, that the blood, which is the matter of the former, may far surpass the rest: whereas, if any of the three last mentioned ones do so, the case is no longer called *plenitude*, but *cacochymy*; because these humours, abounding more than they ought, corrupt the blood. The causes he also divides into such as are manifest and evident, and such as are latent and obscure. The first are such as spontaneously come under the cognizance of our senses when they act or produce their effects: the second are not of themselves perceptible, but may be discovered by reasoning: the third sort, *i. e.* such as he calls *occult* or *concealed*, cannot be discovered at all. Among this last he places the cause of the hydrophobia.

He next proceeds to consider the symptoms of diseases. A symptom he defines to be "a preternatural affection depending upon a disease, or which follows it as a shadow does a body." He acknowledged three kinds of symptoms: the first and most considerable of these consisted in the action of the parts being injured or hindered; the second in a change of the quality of the parts, their actions in the mean time remaining entire; the third related to defects in point of excretion and retention.

After having treated of symptoms, Galen treats of the *signs* of diseases. These are divided into *diagnostic* and *prognostic*. The first are so called because they enable us to know diseases, and distinguish them from each other. They are of two sorts, *pathognomonic* and *adjunct*. The first are peculiar to every disease, make known its precise species, and always accompany it, so that they begin and end with it. The second are common to several diseases, and only serve to point out the difference between diseases of the same species. In a pleurisy, for instance, the pathognomonic signs are a cough, a difficulty of breathing, a pain of the side, and a continued fever; the adjunct signs are the various sorts of matter expectorated, which are sometimes bloody, sometimes bilious, &c. —The diagnostic signs were drawn from the defective or disordered disposition of the parts, or from the diseases themselves; secondly, from the causes of diseases; thirdly, from their symptoms; and lastly, from the particular dispositions of each body, from things which prove prejudicial and those that do service, and from epidemical diseases. —The prognostic signs he gathered from the species, virulence, and peculiar genius of the disease: but as we have already spoken so largely concerning the prognostics of Hippocrates, it is superfluous to be particular on those of Galen. —His method of cure differed little from that of Hippocrates: but from the specimen already given of

Galen's method of teaching the medical art, it is evident that his system was little else than a collection of speculations, distinctions, and reasonings; whereas that of Hippocrates was founded immediately upon facts, which he had either observed himself, or had learned from the observation of others.

The system of Galen, however, notwithstanding its defects and absurdities, remained almost uncontradicted for a very long period. Indeed it may be considered as having been the prevailing system till the inundation of the Goths and Vandals put an almost entire stop to the cultivation of letters in Europe. But during the general prevalence of the system of Galen, there appeared some writers to whom medicine was indebted for improvements, at least in certain particulars. Among the most distinguished of these we may mention Oribasius, Aëtius, Alexander, and Paulus.

Oribasius flourished about the year 360, and was physician to the emperor Julian. He speaks very fully of the effects of bleeding by way of scarification, a thing little taken notice of by former writers; from his own experience he assures us that he had found it successful in a suppression of the menses, defluxions of the eyes, headach, and straitness of breathing even when the person was extremely old. He tells his own case particularly, when the plague raged in Asia, and he himself was taken ill, that the second day he scarified his leg, and took away two pounds of blood; by which means he entirely recovered, as did several others who used it. In this author also we find the first description of a surprising and terrible distemper, which he termed *λυκανθρωπία*, a species of melancholy and madness, which he describes thus. "The persons affected get out of their houses in the night-time, and in every thing imitate wolves, and wander among the sepulchres of the dead till day-break. You may know them by these symptoms: Their looks are pale; their eyes heavy, hollow, dry, without the least moisture of a tear; their tongue exceedingly parched and dry, no spittle in their mouth, extreme thirst; their legs, from the falls and the bruises they receive, full of incurable sores and ulcers."

Aëtius lived very near the end of the fifth, or in the beginning of the sixth century. Many passages in his writings serve to show us how much the actual and potential cautery were used by the physicians of that age. In a palsy, he says, that he should not at all hesitate to make an eschar either way, and this in several places; one in the nape, where the spinal marrow takes its rise, two on each side of it; three or four on the top of the head, one just in the middle, and three others round it. He adds, that in this case, if the ulcers continue running a good while, he should not doubt of a perfect recovery. He is still more particular when he comes to order this application for an inveterate asthma, after all other remedies have been tried in vain. One, he says, should be made on each side near the middle of the joining of the clavicle, taking care not to touch the wind-pipe: two other little ones are then to be made near the carotids under the chin, one on each side, so that the caustic may penetrate no further than the skin; two others under the breasts, between the third and fourth ribs; and again, two more backwards towards the fifth and sixth ribs. Besides these there ought to be one in the middle

Galen.

42
Oribasius.43
Aëtius.

⁴³ *Ætius.* middle of the thorax near the beginning of the xiphoid cartilage over the orifice of the stomach; one on each side between the eighth and ninth ribs; and three others in the back, one in the middle, and the two others just below it, on each side of the vertebræ. Those below the neck ought to be pretty large, not very superficial, not very deep: and all these ulcers should be kept open for a very long time.

Ætius takes notice of the worms bred in different parts of the body called *dracunculi*, which were unknown to *Galen*. He seems also to be the first Greek writer among the Christians, who gives us any specimen of medicinal spells and charms; such as that of a finger of St *Blasius* for removing a bone which sticks in the throat, and another in relation to a fistula. He gives a remedy for the gout, which he calls the *grand drier*; the patient is to use it for a whole year, and observe the following diet each month. "In September, he must eat and drink milk: In October, he must eat garlic; in November, abstain from bathing; in December, he must eat no cabbage; in January, he is to take a glass of pure wine in the morning; in February, to eat no beet; in March, to mix sweet things both in eatables and drinkables; in April, not to eat horse-radish, nor in May the fish called *polypus*; in June, he is to drink cold water in a morning; in July, to avoid venery; and lastly, in August, to eat no mallows." This may sufficiently show the quackery of those times, and how superstition was beginning to mix itself with the art.

⁴⁴ *Alexander.* *Alexander*, who flourished in the reign of *Justinian*, is a more original author than either of the two former. He confines himself directly to the describing the signs of diseases, and the methods of cure, without meddling with anatomy, the materia medica, or surgery, as all the rest did. He employs a whole book in treating of the gout. One method he takes of relieving this disease is by purging; and in most of the purges he recommends *hermodactyls*, of which he has a great opinion. In a caufus, or burning fever, where the bile is predominant, the matter fit for evacuation, and the fever not violent, he prefers purging to bleeding, and says that he has often ordered purging in acute fevers with surprising success. In the caufus also, if a syncope happens from crude and redundant humours, he recommends bleeding. In a syncope succeeding the suppression of any usual evacuation, he recommends bleeding, with frictions. The diagnostics upon which he founds this practice are the following: viz. a face paler and more swelled than usual, a bloated habit of body, with a little sluggish pulse, having long intervals between the strokes. In tertian, and much more in quartan fevers, he recommends vomits above all other remedies, and affirms that by this remedy alone he has cured the most inveterate quartans. On the bulimus, or canine appetite, he makes a new observation, viz. that it is sometimes caused by worms. He mentions the case of a woman who laboured under this ravenous appetite, and had a perpetual gnawing at her stomach and pain in her head: after taking *hiera*, she voided a worm above a dozen of cubits long, and was entirely cured of her complaints.—He is also the first author who takes notice of *rhubarb*; which he recommends in a weakness of the liver and

dyfentery.—*Alexander* is recommended by *Dr Freind* ⁴⁵ *Alexander.* as one of the best practical writers among the ancients, and well worthy the perusal of any modern.

Paulus was born in the island *Ægina*, and lived in ⁴⁵ *Paulus.* the 7th century. He transcribes a great deal from *Alexander* and other physicians. His descriptions are short and accurate. He treats particularly of women's disorders; and seems to be the first instance upon record of a professed *man-midwife*, for so he was called by the Arabians: and accordingly he begins his book with the disorders incident to pregnant women. He treats also very fully of surgery; and gives some directions, according to *Dr Freind*, not to be found in the more ancient writers.

After the downfall of the Roman empire, and when ⁴⁶ *Arabian Physicians.* the inundation of Goths and Vandals had almost completely exterminated literature of every kind in Europe, medicine, though a practical art, shared the same fate with more abstract sciences. Learning in general, banished from the seat of arms, took refuge among the eastern nations, where the arts of peace still continued to be cultivated. To the Arabian physicians, as they have been called, we are indebted both for the preservation of medical science, as it subsisted among the Greeks and Romans, and likewise for the description of some new diseases, particularly the small-pox. Among the most eminent of the Arabians, we may mention *Rhazes*, *Avicenna*, *Albucasis*, and *Avenzoar*. But of their writings it would be tedious, and is unnecessary to give any particular account.—⁴⁷ *Rhazes.* They were for the most part, indeed, only copiers of the Greeks; we are, however, indebted to them for some improvements. They were the first who introduced chemical remedies, though of these they used but few, nor did they make any considerable progress in the chemical art. Anatomy was not in the least improved by them, nor did surgery receive any advancement till the time of *Albucasis*, who lived probably in the 12th century. They added a great deal to botany and the materia medica, by the introduction of new drugs, of the aromatic kind especially, from the east, many of which are of considerable use. They also found out the way of making sugar; and by help of that, syrups; which two new materials are of great use in mixing up compound medicines.

With regard to their practice, in some few particulars they deviated from the Greeks. Their purging medicines were much milder than those formerly in use; and even when they did prescribe the old ones, they gave them in a much less dose than formerly. The same reflection may be made concerning their manner of bleeding, which was never to that excessive degree practised by the Greeks. They deviated from *Hippocrates*, however, in one very trivial circumstance, which produced a violent controversy. The question was, Whether blood in a pleurisy ought to be drawn from the arm of the affected side or the opposite? *Hippocrates* had directed it to be drawn from the arm of the affected side; but the Arabians, following some other ancient physicians, ordered it to be drawn from the opposite one. Such was the ignorance of those ages, that the university of Salamanca in Spain made a decree, that no one should dare to let blood but in the contrary arm; and endeavoured to procure an edict from the emperor *Charles V.* to second it.

Arabian
Physicians.

it; alleging that the other method was of no less pernicious consequence to medicine, than Luther's heresy had been to religion.

48
College of
Salernum.

49
Constantine.

50
State of
medicine in
the 15th
and 16th
centuries.

51
Sweating
sickness in
England.

In consequence of the general decay of learning in the western parts of the world, the Greek writers became totally forgot, because nobody could read the language; and the Arabians, though mostly copiers from them, enjoyed all the reputation that was due to the others. The Arabian physic was introduced into Europe very early, with the most extravagant applause: and not only this, but other branches of their learning, came into repute in the west; insomuch that in the 11th century, the studies of natural philosophy and the liberal arts were called *the studies of the Saracens*. This was owing partly to the crusades undertaken against them by the European princes; and partly to the settlement of the Moors in Spain, and the intercourse they and other Arabians had with the Italians. For, long before the time of the crusades, probably in the middle of the 7th century, there were Hebrew, Arabic, and Latin professors of physic settled at Salernum: which place soon grew into such credit, that Charles the Great thought proper to found a college there in the year 802; the only one at that time in Europe. Constantine the African flourished here towards the latter end of the 11th century. He was a native of Carthage; but travelled into the east, and spent 30 years in Babylon and Bagdad, by which means he became master of the oriental languages and learning. He returned to Carthage; but being informed of an attempt against his life, made his escape into Apulia, where he was recommended to Robert Guiscard, created in 1060 duke of that country, who made him his secretary. He was reputed to be very well versed in the Greek, as well as the eastern tongues; and seems to have been the first who introduced either the Greek or Arabian physic into Italy. His works, however, contain nothing that is new, or material; though he was then counted a very learned man, and for that age no doubt was so.

From this time to the end of the 15th and beginning of the 16th century, the history of physic furnishes us with no interesting particulars. This period, however, is famous for the introduction of chemistry into medicine, and the description of three new distempers, the sweating sickness, the venereal disease, and the scurvy. The sweating sickness began in 1483, in the army of Henry VII. upon his landing at Milford-haven, and spread itself at London from the 21st of September to the end of October. It returned here five times, and always in summer; first in 1485, then in 1506, afterwards in 1517, when it was so violent that it killed many in the space of three hours, so that numbers of the nobility died, and of the commonalty in several towns often the one-half perished. It appeared the fourth time in 1528, and then proved mortal in six hours; many of the courtiers died of it, and Henry VIII. himself was in danger. In 1529, and only then, it infested the Netherlands and Germany, in which last country it did much mischief. The last return of it was in 1551, and in Westminster it carried off 120 in a day. Dr Caius describes it as a pestilent contagious fever, of the duration of one natural day; the sweat he reckoned to be only a natural symptom, or crisis of the distemper. It first affected some par-

ticular part, attended with inward heat and burning, unquenchable thirst, restlessness, sickness at stomach, but seldom vomiting, headach, delirium, then faintness, and excessive drowsiness. The pulse was quick and vehement, and the breath short and laborious.—Children, poor and old people, were less subject to it. Of others, scarce any escaped the attack, and most of them died. Even by travelling into France or Flanders they did not escape; and what is still more strange, the Scots were said not to be affected: abroad the English only were seized, and foreigners in England were free. At first the physicians were much puzzled how to treat this disease. The only cure they ever found, however, was to carry on the sweat for a long time; for, if stopped, it was dangerous or fatal. The way, therefore, was for the patient to lie still, and not expose himself to cold. If nature was not strong enough to force out the sweat, it was necessary to assist her by art, with cloaths, wine, &c. The violence of the distemper was over in 15 hours; but there was no security for the patient till 24 were passed. In some strong constitutions there was a necessity to repeat the sweating, even to 12 times. The removing out of bed was attended with great danger; some who had not sweated enough fell into very ill fevers.—No flesh-meat was to be allowed in all the time of the distemper; nor drink for the first five hours. In the seventh, the distemper increased; in the ninth the delirium came on, and sleep was by all means to be avoided. However terrible this distemper appeared at first, it seldom proved obstinate, if treated in the above-mentioned manner.

In the beginning of the 16th century, the famous chemist Paracelsus introduced a new system into medicine, founded on the principles of his art. The Galenical system had prevailed till his time; but the practice had greatly degenerated, and was become quite trifling and frivolous. The physicians rejected the use of opium, mercury, and other efficacious remedies. Paracelsus, who made use of these, had therefore greatly the advantage over them; and now all things relating to medicine were explained on imaginary chemical principles. It will easily be conceived that a practice founded in this manner could be no other than the most dangerous quackery. At this time, however, it was necessary; for now a new disease over-ran the world, and threatened greater destruction than almost all the old ones put together, both by the violence of its symptoms, and its baffling the most powerful remedies at that time known.—This was the venereal disease, which is said to have been imported from the West-Indies by the companions of Christopher Columbus. Its first remarkable appearance was at the siege of Naples in 1494, from whence it was soon after propagated through Europe, Asia, and Africa. The symptoms with which it made the attack at that time were exceedingly violent, much more so than they are at present; and consequently were utterly unconquerable by the Galenists. The quacks and chemists, who boldly ventured on mercury, though they no doubt destroyed numbers by their excessive use of it, yet showed that a remedy for this terrible distemper was at last found out, and that a proper method of treating it might soon be fallen upon. Shortly after, the West-Indian specific, guaiacum,

Moderns.

52
Paracelsus.

53
Appearance of the
venereal
disease.

Moderns. cum, was discovered: the materia medica was enriched with that and many other valuable medicines, both from the East and West-Indies: which contributed considerably to the improvement of the practice of physic. At this period, as sea voyages of considerable duration became more frequent, the scurvy became a more frequent distemper, and was of course more accurately described. But probably, from supposed analogy to the contagions which at that time were new in Europe, very erroneous ideas were entertained with regard to its being of an infectious nature: And it is not impossible, that from its being attended also with ulcers, it was on some occasions confounded with syphilitic complaints.

54
Progress of
medicine in
the 17th
and 18th
centuries.

55
Discovery
of the cir-
culation.

The revival of learning, which now took place throughout Europe, the appearance of these new distempers, and the natural fondness of mankind for novelty, contributed greatly to promote the advancement of medicine as well as other sciences. While at the same time, the introduction of the art of printing rendered the communication of new opinions as well as new practices so easy a matter, that to enumerate even the names of those who have been justly rendered eminent for medical knowledge would be a very tedious task. It was not, however, till 1628 that Dr William Harvey of London demonstrated and communicated to the public one of the most important discoveries respecting the animal economy, the circulation of the blood. This discovery, more effectually than any reasoning, overturned all the systems which had subsisted prior to that time. It may justly be reckoned the most important discovery that has hitherto been made in the healing art: for there can be no doubt that it puts the explanation of the phenomena of the animal body, both in a state of health and disease, on a more solid and rational footing than formerly. It has not, however, prevented the rise of numerous fanciful and absurd systems. These, though fashionable for a short time, and strenuously supported by blind adherents, have yet in no long period fallen into deserved contempt. And notwithstanding the abilities and industry of Stahl, Hoffman, Boerhaave, and Cullen, we may easily venture to assert that no general system has yet been proposed which is not liable to innumerable and unfurmountable objections. Very great progress has indeed been made in explaining the philosophy of the human body, from ascer-

taining by decisive experiment the influence of the circulating, the nervous, and the lymphatic systems in the animal economy. But every attempt hitherto made to establish any general theory in medicine, that is to conduct the cure of every disease on a few general principles, has equally deviated from truth with those of Hippocrates and Galen; and has equally tended to mislead those who have adopted it. Indeed we may with confidence venture to assert, that from the very nature of the subject itself, medicine does not admit of such simplicity. No one can deny that the human body consists of a very great number of different parts, both solids and fluids. It is, however, equally certain, that each of these is from many different causes liable to deviations from the sound state. And although some slight changes may take place without what can be called a morbid affection, yet we well know, that every change taking place to a certain degree in any one part will necessarily and unavoidably produce an affection of the whole. Hence we may without hesitation venture to affirm, that every general theory which can be proposed, attempting to explain the phenomena, and conduct the cure of all diseases on a few general principles, though for some time it may have strenuous advocates, will yet in the end be found to be both ill-grounded and pernicious.

The art of medicine has been much more usefully improved by careful attention to the history, theory, and practice of particular diseases, and by endeavouring to ascertain from cautious observation the symptoms by which they are to be distinguished, the causes by which they are induced, and the means by which they are to be prevented, alleviated, or cured. On this footing, therefore, we shall endeavour to give a brief account of at least the most important affections to which the human body is subjected, delivering what appear to us to be the best established facts and observations respecting each.

But before entering on the consideration of particular diseases, or what has commonly been styled the practice of medicine, it is necessary to give a general view of the most important functions of the animal body, and of the chief morbid affections to which they are subjected; a branch which has usually been named the *Theory or Institutions of Medicine*.

THEORY OF MEDICINE, or an Account of the principal Functions of the Animal Body.

WHILE the functions of living animals, but particularly of the human species, are very numerous, the accounts given of these both in a state of health and disease are very various. Without, therefore, pretending to enumerate the contradictory opinions of different authors, we shall here present the reader with a view of this subject, extracted from one of the latest and best publications respecting it, the *Conspectus Medicinæ Theoreticæ* of Dr James Gregory, formerly professor of the institutions of medicine in the university of Edinburgh, and now professor of practice.

In this work, which was first published in 1780, and afterwards reprinted under an enlarged form in

1782, Dr Gregory introduces his subject by observing, that some functions of the human body relate to itself only, and others to external things. To the latter class belong those which by physicians are called the *animal functions*; to which are to be referred all our senses, as well as the power of voluntary motion, by which we become acquainted with the universe, and enjoy this earth. Among the functions which relate to the body, only some have been named *vital*, such as the circulation of the blood and respiration; because, without the constant continuance of these life cannot subsist. Others, intended for repairing the waste of the system, have been termed the *natural functions*.

56
Division of
the func-
tions into a-
nimal, vital,
and nat-
ural.

Division of
functions.

tions: for by the constant attrition of the solids, and the evaporation of the fluid parts of the body, we stand in need of nourishment to supply this waste; after which the putrid and excrementitious parts must be thrown out by the proper passages. The digestion of the food, secretion of the humours, and excretion of the putrid parts of the food, are referred to this class; which, though necessary to life, may yet be interrupted for a considerable time without danger.

57
Distinction
of diseases
into simple
and com-
pound.

A *disease* takes place, when the body has so far declined from a sound state, that its functions are either quite impeded, or performed with difficulty. A disease therefore may happen to any part of the body either solid or fluid, or to any one of the functions: and those may occur either single, or several of them joined together; whence the distinction of diseases into *simple* and *compound*.

We have examples of the most simple kinds of diseases, in the rupture or other injury of any of the corporeal organs, by which means they become less fit for performing their offices; or, though the organs themselves should remain sound, if the solids or fluids have degenerated from a healthy state; or if, having lost their proper qualities, they have acquired others of a different, perhaps of a noxious nature; or lastly, if the moving powers shall become too weak or too strong, or direct their force in a way contrary to what nature requires.

58
Symptoms.

The most simple diseases are either productive of others, or of *symptoms*, by which alone they become known to us.—Every thing in which a sick person is observed to differ from one in health is called a *symptom*; and the most remarkable of these symptoms, and which most constantly appear, define and constitute the disease.

The causes of diseases are various; often obscure, and sometimes totally unknown. The most full and perfect proximate cause is that which, when present, produces a disease, when taken away removes it, and when changed also changes it.—There are also remote causes, which physicians have been accustomed to divide into the *predisponent* and *exciting* ones. The former are those which only render the body fit for a disease, or which put it into such a state that it will readily receive one. The exciting cause is that which immediately produces the disease in a body already disposed to receive it.

59
Predispo-
nent cause.60
Exciting
cause.

The predisponent cause is always inherent in the body itself, though perhaps it originally came from without; but the exciting cause may either come from within or from without.

61
Proximate
cause.

From the combined action of the predisponent and exciting causes comes the *proximate* cause, which neither of the two taken singly is able to produce; seeing neither every exciting cause will produce a disease in every person, nor will every one predisposed to a disease fall into it without an exciting cause.—A body predisposed to disease therefore has already declined somewhat from a state of perfect health, although none of its functions are impeded in such a manner that we can truly say the person is diseased. Yet sometimes the predisponent cause, by continuing long, may arrive at such an height, that it alone, without the addition of any exciting cause, may pro-

duce a real disease.—Of this we have examples in the debility of the simple solids, the mobility of the living solids, and in plethora.—The exciting cause also, though it should not be able immediately to bring on a disease; yet if it continues long, will by degrees destroy the strongest constitution, and render it liable to various diseases; because it either produces a predisponent cause, or is converted into it, so that the same thing may sometimes be an exciting cause, sometimes a predisponent one; of which the inclemencies of the weather, sloth, luxury, &c. are examples.

Diseases, however, seem undoubtedly to have their origin from the very constitution of the animal machine; and hence many diseases are common to every body when a proper exciting cause occurs, though some people are much more liable to certain diseases than others. Some are hereditary; for as healthy parents naturally produce healthy children, so diseased parents as naturally produce a diseased offspring. Some of these diseases appear in the earliest infancy; others occur equally at all ages; nor are there wanting some which lurk unsuspected even to the latest old age, at last breaking out with the utmost violence on a proper occasion. Some diseases are born with us, even though they have no proper foundation in our constitution, as when a fœtus receives some hurt by an injury done to the mother; while others, neither born with us nor having any foundation in the constitution, are sucked in with the nurse's milk. Many diseases accompany the different stages of life; and hence some are proper to infancy, youth, and old age. Some also are proper to each of the sexes: especially the weaker sex, proceeding, no doubt, from the general constitution of the body, but particularly from the state of the parts subservient to generation. Hence the diseases peculiar to virgins, to menstruating women, to women with child, to lying-in women, to nurses, and to old women. The climate itself, under which people live, produces some diseases; and every climate hath a tendency to produce a particular disease, either from its excess of heat or cold, or from the mutability of the weather. An immense number of diseases also may be produced by impure air, or such as is loaded with putrid, marshy, and other noxious vapours. The same thing may happen likewise from corrupted aliment, whether meat or drink; though even the best and most nutritious aliment will hurt if taken in too great quantity; not to mention poisons, which are endowed with such pernicious qualities, that even when taken in a very small quantity they produce the most grievous diseases, or perhaps even death itself. Lastly, from innumerable accidents and dangers to which mankind are exposed, they frequently come off with broken limbs, wounds, and contusions, sometimes quite incurable; and these misfortunes, though proceeding from an external cause at first, often terminate in internal diseases.

Origin of
Diseases.62
Hereditary
diseases.65
Diseases
from age
and sex.64
Diseases
from cli-
mate.65
Diseases
from ac-
cidents.

Hitherto we have mentioned only the dangers which come from without; but those are not less, nor fewer in number, which come from within. At every breath, man pours forth a deadly poison both to himself and others. Neither are the effluvia of the lungs alone hurtful: there flows out from every pore of the body a most subtle and poisonous matter, perhaps of a putrescent

Origin of
Diseases.Origin of
Diseases.

scient nature, which being long accumulated, and not allowed to diffuse itself through the air, infects the body with most grievous diseases; nor does it stop here, but produces a contagion which spreads devastation far and wide among mankind. From too much or too little exercise of our animal-powers also no small danger ensues. By inactivity either of body or mind, the vigour of both is impaired; nor is the danger much less from too great employment. By moderate use, all the faculties of the mind, as well as all the parts of the body, are improved and strengthened; and here nature has appointed certain limits, so that exercise can neither be too much neglected, nor too much increased, with impunity. Hence those who use violent exercise, as well as those who spend their time in sloth and idleness, are equally liable to diseases; but each to diseases of a different kind: and hence also the bad effects of too great or too little employment of the mental powers.

66
Diseases
from pas-
sions of the
mind.

Besides the dangers arising from those actions of the body and mind which are in our own power, there are others arising from those which are quite involuntary. Thus, passions of the mind, either when carried to too great excess, or when long continued, equally destroy the health; nay, will even sometimes bring on sudden death. Sleep also, which is of the greatest service in restoring the exhausted strength of the body, proves noxious either by its too great or too little quantity. In the most healthy body, also, many things always require to be evacuated. The retention of these is hurtful, as well as too profuse an evacuation, or the excretion of those things either spontaneously or artificially which nature directs to be retained. As the solid parts sometimes become flabby, soft, almost dissolved, and unfit for their proper offices; so the fluids are sometimes inspissated, and formed even into the hardest solid masses. Hence impeded actions of the organs, vehement pain, various and grievous diseases. Lastly, some animals are to be reckoned among the causes of diseases: namely, such as support their life at the expence of others: and these either invade us from without, or take up their residence within the body, gnawing the bowels while the person is yet alive, not only with great danger and distress to the patient, but sometimes even producing death itself.

67
*Vis medica-
trix natura.*

Man, however, is not left without defence against so many and so great dangers. The human body is possessed of a most wonderful power, by which it preserves itself from diseases, keeps off many, and in a very short time cures some already begun, while others are by the same means more slowly brought to a happy conclusion. This power, called the *autoeratoia*, or *vis medicatrix natura*, is well known both to physicians and philosophers, by whom it is most justly celebrated; this alone is sufficient for curing many diseases, and is of service in all. Nay, even the best medicines operate only by exciting and properly directing this force; for no medicine will act on a dead carcase. But though physicians justly put confidence in this power, and though it generally cures diseases of a slighter nature, it is not to be thought that those of the more grievous kind are to be left to the unassisted efforts of the *vis medicatrix*. Physicians therefore have a twofold error to avoid, namely, either despising the powers of na-

VOL. XI. Part I.

ture too much, or putting too great confidence in them; because in many diseases these efforts are either too feeble or too violent, insomuch that sometimes they are more to be dreaded than even the disease itself. So far therefore is it from being the duty of a physician always to follow the footsteps of Nature, that it is often necessary for him to take a directly contrary course, and oppose her efforts with all his might.

After this general view of the functions of the animal body, of the nature and causes of disease, and of the powers by which these are to be combated, Dr Gregory proceeds to treat of the solid materials of which the body is formed. He tells us, that the animal solid, when chemically examined, yields earth, oil, salt, water, phlogiston or inflammable air, and a great quantity of mephitic air. These elements are found in various proportions in the different parts of the body; and hence these parts are endowed with very different mechanical powers, from the hardest and most solid bone to the soft and almost fluid retina. Nay, it is principally in this difference of proportion between the quantities of the different elements, that the difference between the solid and fluid parts of the animal consist, the former having much more earth and less water in their composition than the latter. The cohesion, he thinks, is owing to something like a chemical attraction of the elements for one another; and its cause is neither to be sought for in the gluten, fixed air, nor earth. This attraction, however, is not so strong but that even during life the body tends to dissolution; and immediately after death putrefaction commences, provided only there be as much moisture in it as will allow an intestine motion to go on. The greater the heat, the sooner does putrefaction take place, and with the greater rapidity does it proceed; the mephitic air flies off, and together with it certain saline particles; after which, the cohesion of the body being totally destroyed, the whole falls into a putrid colluvies, of which at length all the volatile parts being dissipated, nothing but the earth is left behind.

This analysis, he owns, is far from being perfect; because nobody has ever been able, by combining the chemical principles of flesh, to reproduce a compound any thing like what the flesh originally was: but, however imperfect the analysis may be, it still has the advantage of showing in some measure the nature and causes of certain diseases, and thus leads physicians to the knowledge of proper remedies.

The solid parts are fitted for the purposes of life in three several ways; namely, by their cohesion, their flexibility, and their elasticity, all of which are various in the various parts of the body. Most of the functions of life consist in various motions. In some the most violent and powerful motions are required; and therefore such a degree of cohesion is necessary in these parts as will be sufficient for allowing them to perform their offices without any danger of laceration. It is therefore necessary that some of the solid parts should be more flexible than others; and it is likewise necessary that these parts, along with their flexibility, should have a power of recovering their former shape and situation, after the removal of the force by which they were altered.

These variations in flexibility, within certain li-
mits,

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68
Chemical
analysis of
the animal
solids.69
Qualities
of the ani-
mal solids.

mits, seldom produce any material consequence with regard to the health: though sometimes, by exceeding the proper bounds, they may bring on real and very dangerous diseases; and this either by an excess or diminution of their cohesion, flexibility, or elasticity. By augmenting the cohesion, the elasticity is also for the most part augmented, but the flexibility diminished; by diminishing the cohesion, the flexibility becomes greater, but the elasticity is diminished.

The causes of these affections, though various, may be reduced to the following heads. Either the chemical composition of the matter itself is changed; or, the composition remaining the same, the particles of the solid may be so disposed, that they shall more or less strongly attract one another. As to the composition, almost all the elements may exist in the body in an undue proportion, and thus each contribute its share to the general disorder. But of many of these things we know very little; only it is apparent, that the fluid parts, which consist chiefly of water, and the solid, which are made up of various elements, are often in very different proportions: the more water, the less is the cohesion or elasticity, but the greater the flexibility; and the reverse happens, if the solid or earthy part predominates.

70
Causes af-
fecting the
solids.

The remote causes of these different states, whether predisponent or exciting, are very various. In the first place, idiosyncrasy itself, or the innate constitution of the body, contributes very much to produce the above-mentioned effects. Some have naturally a much harder and drier temperament of the body than others; men, for instance, more than women; which can with the utmost difficulty, indeed scarce by any means whatever, admit of an alteration. The same thing takes place at different periods of life; for, from first to last, the human body becomes always drier and more rigid. Much also depends on the diet made use of, which always produces a corresponding state of the solids in proportion to its being more or less watery. Neither are there wanting strong reasons for believing, that not only the habit of the body, but even the disposition of the mind, depends very much on the diet we make use of. The good or bad concoction of the aliment also, the application of the nourishment prepared from it, and likewise the state of the air with regard to moisture or dryness, affect the temperament of the body not a little; and hence those who inhabit mountains or dry countries, are very different from the inhabitants of low marshy places. Lastly, the manner of living contributes somewhat to this effect: Exercise presses out and exhales the moisture of the body, if in too great quantity; on the contrary, sloth and laziness produce an effect directly opposite, and cause a redundancy of humour.

But, putting the chemical composition of the solid parts out of the question altogether, they may be affected by many other causes. The condensation, for instance, or compression of the particles, whether by mechanical causes or by means of cold or heat, makes a considerable alteration in the strength and elasticity of every solid body. How much mechanical pressure contributes to this may be understood from the experiments of Sir Clifton Wintringham: and hence also are we to deduce the reason of many facts of the highest importance in the animal economy; namely, the

growth, state, decrease of the body; its rigidity daily increasing; and at last the unavoidable death incident to old age from a continuance of the same causes.

Qualities
of the Ani-
mal Solids.

Perhaps the different density of the solids is in some measure owing to Nature herself; but it seems rather to depend more on the powers of exercise or inactivity in changing the state of the solids, the effects of which on the body, whether good or bad, may hence be easily understood.

Heat relaxes and expands all bodies, but cold renders them more dense and hard; the effects of which on the human body are well known to most people. Though the body is found to preserve a certain degree of heat almost in every situation, it is impossible but that its surface must be affected by the temperature of the ambient atmosphere; and we have not the least reason to doubt that every part of the body may thus feel the effects of that temperature. What a difference is there between one who, exposed to the south-wind, becomes lazy and languid, scarce able to drag along his limbs; and one who feels the force of the cold north-wind, which renders the whole body alert, strong, and fit for action?

That these various causes, each of which is capable of affecting the constitution of the body when taken singly, will produce much greater effects when combined, is sufficiently evident. The experiments of Bryan Robinson, the effects of the warm bath, and indeed daily experience, show it fully.

It is not yet certainly known what is the ultimate structure of the minutest parts of the animal-solid; whether it consists of straight fibres or threads, whose length is very considerable in proportion to their breadth, variously interwoven with one another, as Boerhaave supposes; or of spiral ones, admirably convoluted and interwoven with one another, as some microscopical experiments seem to show; or whether the cellular texture be formed of fibres and *laminae*, and from thence the greatest part of the body, as the celebrated Haller hath endeavoured to prove.

The cellular texture is observed throughout the whole body: it surrounds and connects the fibres themselves, which are sufficiently apparent in many of the organs; and slightly joins the different parts which ought to have any kind of motion upon the neighbouring ones. By a condensation of the same substance also, the strongest, and what seem the thinnest, membranes are formed; the most simple of which, being accurately examined, discover the cellular structure. This cellular substance sometimes increases to a surprising degree, and all parts formed of it, membranes, vessels, &c. especially by a gentle distension; for a sudden and violent distension either breaks it altogether, or renders it thinner. Sometimes also it grows between neighbouring parts, and joins those which nature has left free. Preternatural concretions of this kind are often observed after an inflammation of the lungs or of the abdominal viscera; and these new membranes are found to be truly cellular. This substance, when cut, or by any other means divided, grows together of its own accord; but if, by reason of very great inflammation and suppuration, a large portion of the cellular texture has been destroyed, it is never again renewed, and an ugly scar is left. It is even said,

71
Cellular
texture.

Cellular
Texture.

said, that this substance, in certain cases, is capable of joining the parts either of the same body with one another, or of a foreign body with them; and upon this, if on any foundation, rests the art of Taliacotius and that of transplanting teeth, lately so much talked of.

The cellular texture is in some places merely a kind of net-work, in others filled with fat. Wherever too great bulk or compression would have been inconvenient or dangerous, as in the head, lungs, eyes, eyebrows, penis, scrotum, &c. there it collects no fat, but is lax, and purely reticulated; but between the muscles of the body and limbs below the skin, in the abdomen, especially in the omentum and about the kidneys, very much fat is secreted and collected.

72
Animal fat.

The fat is a pure animal oil, not very different from the expressed and mild vegetable ones; during life it is fluid, but of different degrees of thickness in different parts of the body. It is secreted from the blood, and is often suddenly reabsorbed into it, though pure oil is very rarely observed in the blood. It is indeed very probable, that oil, by digestion, partly in the *primæ viæ*, and partly in the lungs, is converted into gluten, and this again into oil by means of secretion; though no organs secreting the fat can be shown by anatomists. It is, however, probable, that there are such organs; and that the cellular texture has some peculiar structure in those parts which are destined to contain the fat already secreted, without suffering it to pass into other places; for it never passes into those parts which are purely reticulated, although the cellular texture is easily permeable by air or water over the whole body from head to foot.

The fat is augmented by the use of much animal-food, or of any other that is oily and nourishing, provided the digestion be good; by the use of strong drink, especially malt-liquor; by much rest of body and mind, much sleep and inactivity, castration, cold, repeated bloodletting, and in general by whatever diminishes the vital and animal powers. Much, however, depends on the constitution of the body itself; nor is it possible to fatten a human creature at pleasure like an ox. A certain degree of fatness, according to the age of the person, is a sign and effect of good health; but when too great, it becomes a disease of itself, and the cause of other diseases. It may always be very certainly removed by strong exercise, little sleep, and a spare and solid diet. The fat always makes up a considerable part of the bulk of the body, and very often by far the greatest part. Its use seems to be to make the motion of the body more easy and free by lessening the friction of the moving parts, and thus preventing the abrasion of the solids, which would otherwise happen. It is also of use to hinder the parts from growing together, which sometimes happens, when by an ulcer or any other accident a part of the cellular texture containing the fat is destroyed. Besides all this, the fat contributes not a little to the beauty of the body, by filling up the large interstices between the muscles, which would otherwise give the person a deformed and shocking appearance. It is thought to be nutritious, when absorbed from its cells by the blood; but of this we have no great certainty. It seems to have some power

of defending from the cold, seeing nature has bestowed it in very great quantity on those animals which inhabit the colder regions.

Animal
Fat.

Those parts of the body which enjoy sense and mobility, are called *living* or *vital* solids. They are the brain, cerebellum, medulla oblongata, spinal marrow, the nerves arising from these and diffused throughout the whole body, and which are distributed through the various organs of sense and through the muscles, and lastly the muscles themselves. Sensation is much more general than mobility, as being common to all the parts already mentioned. Mobility is proper to the muscular fibres alone: wherever there is sensation, therefore, we may believe that there are nerves; and wherever there is mobility, we may believe that muscular fibres exist. Nay, even mobility itself seems to originate from the connection which the muscles have with the nerves; for soon after the nerves are compressed, or tied, or cut, the muscles to which they are distributed lose their faculties; which happens, too, when the brain itself, or the origin of the nerves, is affected. Some reckon that the muscles are produced from the nerves, and consist of the same kind of matter. Both indeed have a similar structure, as being fibrous and of a white colour: for the muscles when well freed from the blood, of which they contain a great abundance, are of this colour as well as the nerves; neither can the nervous fibres by any means be distinguished from the muscular fibres themselves. Both have also sensation; and both stimulants and sedatives act in the same manner, whether they be applied to the muscles themselves or to the nerves.

It is difficult for us to discover the origin of many parts of the body, or to ascertain whether they are produced all at the same time or one after another: yet it must be owned, that many of the muscular parts are observed to have attained a remarkable degree of strength, while the brain is still soft and almost fluid; and that the action of these muscular parts is required for the action and growth of the brain. The muscles are also of a much firmer contexture than the nerves; and enjoy a power of their own, namely, that of irritability, of which the nerves never participate. Of necessity, therefore, either the muscles must be constructed of some kind of matter different from that of the nerves; or if both are made of the same materials, their organization must be exceedingly different. But if the substance of the muscles and nerves be totally different, we may easily be convinced that much of the one is always mixed with the other; for it is impossible to prick a muscle even with the smallest needle, without wounding or lacerating many nervous fibres at the same time. Since, therefore, there is such a close connection between the muscles and nerves both as to their functions and structure, they are deservedly reckoned by physiologists to be parts of the same genus, called the *genus nervosum*, or *nervous system*.

After treating of sense in general, Dr Gregory proceeds to consider particularly each of the senses both external and internal. He begins with the sense of feeling, as being the most simple, and at the same time in common to every part of the nervous system. In some places, however, it is much more acute than in others; in the skin, for in-

74

Sense of
feeling.

External
Senses.

stance, and especially in the points of the fingers. These are reckoned to have *nervous papille*, which by the influx of the blood are somewhat erected in the action of contact, in order to give a more acute sensation; though indeed this opinion seems rather to be founded on a conjecture derived from the structure of the tongue, which is not only the organ of taste, but also a most delicate organ of touch, than upon any certain observations.

75
Pain.

From the sense of feeling, as well as all the other senses, either pain or pleasure may arise; nay, to this sense we commonly refer both pain and almost all other troublesome sensations, tho' in truth pain may arise from every vehement sensation. It is brought on by any great force applied to the sentient part; whether this force comes from within or from without. Whatever, therefore, pricks, cuts, lacerates, distends, compresses, bruises, strikes, gnaws, burns, or in any manner of way stimulates, may create pain. Hence it is so frequently conjoined with so many diseases, and is often more intolerable even than the disease itself. A moderate degree of pain stimulates the affected part, and by degrees the whole body; produces a greater flux of blood and nervous power to the part affected; and often stimulates to such motions as are both necessary and healthful. Hence, pain is sometimes to be reckoned among those things which guard our life. When very violent, however, it produces too great irritation, inflammation and its consequences, fever, and all those evils which flow from too great force of the circulation; it disorders the whole nervous system, and produces spasms, watching, convulsions, delirium, debility, and fainting. Neither the mind nor body can long bear very vehement pain; and indeed Nature has appointed certain limits, beyond which she will not permit pain to be carried, without bringing on delirium, convulsions, syncope, or even death, to rescue the miserable sufferer from his torments.

Long continued pain, even though in a more gentle degree, often brings on debility, torpor, palsy, and rigidity of the affected part. But if not too violent, nor accompanied with fever, sickness, or anxiety, it sometimes seems to contribute to the clearness and acuteness of the judgment, as some people testify who have been afflicted with the gout.

76
Anxiety.

Anxiety is another disagreeable sensation, quite different from pain, as being more obtuse and less capable of being referred to any particular part, though frequently more intolerable than any pain. But we must take care to distinguish between this anxiety of which we treat in a medical sense, and that which is spoken of in common discourse. The latter does not at all depend on the state of the body, but belongs entirely to the mind; and arises from a sense of danger, or a foresight of any misfortune. The former is truly corporeal; and derives, no less than pain, its origin from a certain state of the body. Notwithstanding this difference, however, it is very possible for both these kinds of anxiety to be present at the same time, or for the one to be the cause of the other. A very great bodily anxiety will strike fear and despondency into the most resolute mind; and mental anxiety, on the contrary, if very violent and long-continued, may induce the former, by destroying the powers of the

body, especially those which promote the circulation of the blood.

External
Senses.

Anxiety, in the medical sense of the word, arises in the first place from every cause disturbing or impeding the motion of the blood through the heart and large vessels near it. Anxiety, therefore, may arise from many diseases of the heart and its vessels, such as its enlargement, too great constriction, ossification, polypus, palpitation, syncope, inflammation, debility, and also some affections of the mind. It is likewise produced by every difficulty of breathing, from whatever cause it may arise; because then the blood passes less freely through the lungs: anxiety of this kind is felt deep in the breast. It is said also to arise from the difficult passage of the blood through the liver or other abdominal viscera.

A certain kind of anxiety is very common and troublesome to hypochondriacal people; and arises from the stomach and intestines being either loaded with indigested and corrupted food, or distended with air produced by fermentation and extricated from the aliments. By such a load, or distension, the stomach, which is a very delicate organ, becomes greatly affected. Besides, the free descent of the diaphragm is thus hindered, and respiration obstructed. Anxiety of this kind is usually very much and suddenly relieved by the expulsion of the air; by which, as well as by other signs of a bad digestion, it is easily known. In these cases the anxiety is usually, though with little accuracy, referred to the stomach.

Anxiety also frequently accompanies fevers of every kind, sometimes in a greater and sometimes in a lesser degree. In this case it arises as well from the general debility as from the blood being driven from the surface of the body and accumulated in the large vessels; as in the beginning of an intermittent fever. Or it may arise from an affection of the stomach, when overloaded with crude, corrupted aliment; or distended and nauseated with too much drink, especially medicated drink. As the fever increases, the anxiety of the patient becomes greater and greater; remarkably so, according to the testimony of physicians, either immediately before the crisis or on the night preceding it; as before the breaking out of exanthemata, hæmorrhagy, sweat, or diarrhœa, which sometimes remove fevers. The patient feels likewise an anxiety from the striking in of any eruption or critical metastasis. This sensation also accompanies fevers and most other diseases, when the vital power is exhausted, and death approaches, of which it is the forerunner and the sign. It happens at that time, because the vital powers, unable to perform their functions, cannot make the blood circulate. But what kind of anxiety this is, the other signs of approaching death shows very evidently. Moreover, even in the time of sleep, anxiety may arise from the same causes; hence frightful dreams, which frequently disturb our repose with surprise and terror.

Itching, an uneasy sensation, with a desire of scratching the place affected, is often very troublesome, altho' it seems to be more a-kin to pleasure than to pain. As pain proceeds from too great an irritation, either chemical or mechanical, so does itching proceed from a slight one. Titillation, or friction, of a woollen shirt,

77
Itching.

External
Senses.External
Senses.

for instance, upon the skin of a person unaccustomed to it, and of a delicate constitution, excites itching; as do also many acrid fossils, vegetables, and animals. Hence an itching is the first sensation after the application of cantharides, although the same, when augmented, becomes painful. The same effect is produced by any thing acrid thrown out upon the skin; as in exanthematic fevers, the disease called the *itch*, &c. Lice, worms, especially ascarides, irritating either the skin or the intestines, excite a troublesome itching. Certain species of internal itching excites people to many necessary actions both in a diseased and healthy state; such as the excretion of the *fæces* and urine, coughing, sneezing, and the like.

Too acute a sensation over the whole body is very rarely if ever observed. In a particular part the sense of feeling is often more acute than it ought to be, either from the cuticle itself being too thin and soft, or being removed; or from the part itself being inflamed, or exposed to too great heat. It becomes obtuse, or is even quite destroyed over the whole body, or in great part of it, from various affections of the brain and nerves; as when they are wounded, compressed, or defective in vital power. This is called *anaesthesia*, and sometimes accompanies palsy.

This sense may be deficient in a particular part, either from the nerve being diseased, or from its being compressed or wounded, or from the part itself being exposed to too great a degree of cold;—or from the scarf-skin which covers it being vitiated, either becoming too thick or hard, by the handling of too rough, or hard, or hot bodies, as is the case with glass-makers and smiths; or from the elevation of the cuticle from the subjacent cutis, or true skin itself, by the interposition of blood, serum, or pus; or from the cutis being macerated, relaxed, or become torpid, which sometimes happens to hydropic persons; or lastly, from the whole organ being corrupted by gangrene, burning, cold, or contusion. This sense is very rarely depraved, unless perhaps in the case of delirium, when all the functions of the brain are disturbed in a surprising manner.

78
Taste.

The sense next to be considered is that of taste, the principal organ of which is the tongue; the nearer the tip of it, the more acute is the sense, and the nearer the glottis so much the more obtuse. It must be owned, however, that some kind of acrid substances, the taste of which is scarce perceived upon the tip of the tongue, excite a most vehement sensation about its roots, or even in the throat itself. The tongue is endowed with many large and beautiful nervous papillæ, which seem to be the chief seat of this sense, and in the act of tasting are elevated and erected, in order to give the more acute sensation.

Nothing can be tasted which is not soluble in the saliva, that, being applied in a fluid form, it may pervade the involucre of the tongue, and affect its nervous pulp; and hence insoluble earths are quite insipid. Neither is it sufficient for a body to be soluble that it may be tasted: it must also have something in it saline, or at least acrid, in order to stimulate the nervous substance; and hence, whatever has less salt than the saliva is totally insipid.

The taste is rarely found to be too acute, unless through a fault in the epidermis which covers the

tongue. If this be removed or wounded, or covered with ulcers, aphthæ, &c. then the taste, becoming too acute, is painful: or sometimes no other sensation than that of pain is felt. It may be impaired, as well as the sense of feeling, from various diseases of the brain and nerves; of which, however, the instances are but rare. In some people it is much more dull than in others; and in such the sense of smelling is usually deficient also. The taste is most commonly deficient on account of the want of saliva; for a dry tongue cannot perceive any taste: hence this sense is very dull in many diseases, especially in fevers, catarrhs, &c. as well on account of the defect of saliva as of appetite, which is of so much service in a state of health; or by reason of the tongue being covered with a viscid mucus.

The taste is frequently depraved; when, for example, we have a perception of taste without the application of any thing to the tongue; or, if any thing be applied to it, when we perceive a taste different from what it ought to be. This happens for the most part from a vitiated condition of the saliva, which is itself tasted in the mouth. Hence we may perceive a sweet, saline, bitter, putrid, or rancid taste, according to the state of the saliva: which may be corrupted either from the general vitiated condition of the mass of humours, or the glands which secrete it; of the mouth itself; or even of the stomach, the vapours and eructations of which rise into the mouth, especially when the stomach is diseased.

Besides the faults of the saliva, however, the taste may be vitiated from other causes; as, for instance, the condition of the nervous papillæ. This, however, is as yet but little known to us; for the taste is sometimes plainly vitiated when at the same time the saliva appears quite insipid when tasted by other people.

Physicians, in almost every disease, but especially in fevers, inquire into the state of the tongue; not, indeed, without the greatest reason: for from this they can judge of the condition of the stomach; of the thirst, or rather the occasion the patient has for drink, when, on account of his delirium or stupor, he neither feels his thirst nor is able to call for drink. And, lastly, from an inspection of the tongue, physicians endeavour to form some judgment concerning the nature, increase, and remission of the fever.

After the sense of taste, Dr Gregory next treats of that of smell. Its seat is in that very soft and delicate membrane, filled with nerves and blood-vessels, which covers the internal parts of the nose, and the various sinuses and cavities proceeding from thence. This sense is more acute about the middle of the septum, and the *ossa spongiosa*, where the membrane is thicker and softer, than in the deeper cavities, where the membrane is thinner, less nervous, and less filled with blood-vessels; although even these do not seem to be altogether destitute of the sense of smelling.

As by our taste we judge of the soluble parts of bodies, so by our smell we judge of those very volatile and subtle parts which fly off into the air; and like the organ of taste, that of smell is kept moist, that it may have the more exquisite sensation, partly by its proper mucus, and partly by the tears which descend from the eyes.

Some kinds of odours greatly affect the nervous system,

79
Smell.

External
Senses.

stem, and produce the most surprising effects. Some gratefully excite it, and immediately recruit the spirits when almost sinking; while some produce fainting, nay, as it is alleged, even sudden death. To this head also are we to refer those antipathies, which, though truly ridiculous, are often not to be subdued by any force of mind.

This sense is sometimes too acute, as well from some disease in the organ itself, which happens more rarely, as from the too great sensibility of the nervous system in general, as is sometimes observed in nervous fevers, phrenitis, and hysteria. It is more frequently, however, too dull, either from diseases of the brain and nerves, as from some violence done to the head, or from some internal cause; or it may proceed from a dryness of the organ itself, either on account of the customary humours being suppressed or turned another way, or from the membranes being oppressed with too great a quantity of mucus or of tears. Of both these cases we have instances in the catarrh, where at first the nostrils are dry, but afterwards are deluged with a thin humour, or stopped up with a thick one. But in these, and many other examples, the membrane of the nose itself is affected with inflammation, relaxation, or too great tension, by which it is impossible but the nerves, which constitute a great part of it, must be vitiated. It is evident also, that whatever obstructs the free entrance of the air into the nostrils, or impedes its passage through them, must prove detrimental to the sense of smelling.

80
Hearing.

The sense of hearing is more frequently vitiated than almost any of the rest, as having a most delicate organ, and one composed of many and very small parts, of which an account is given under the article ANATOMY.—It frequently becomes too acute; either from the general habit of the body being too irritable, such as often happens to hysterical and lying-in-women; or from too great a sensibility of the brain itself, which is not unfrequently observed in fevers, as well as in phrenitis, and sometimes in the true mania; or it may be from a disease of the ear itself, as when it is affected with inflammation, pain, or too great tension.—It may be rendered dull, or even be altogether destroyed, so that the person shall become totally deaf from the same causes acting with different degrees of force. This happens especially from the want of the external ear; or from the meatus auditorius being stopped up with mucus, wax, or other matters; or from the sides of the canal growing together, as sometimes happens after suppuration or the small-pox; or by the membrane of the tympanum becoming rigid or relaxed, or being eroded or ruptured; or the tympanum itself, or the Eustachian tube, may from certain causes be obstructed; or some of the little bones or membranes, or some of the muscles of the labyrinth itself, may be affected with concretion, spasm, palsy, or torpor; or lastly, it may happen from diseases of the brain and nerves, all the organs of hearing remaining sound. Hence deafness is often a nervous disease, coming suddenly on, and going off of its own accord. Hence also it is common in old people, all of whose solid parts are too rigid, while their nervous parts have too little sensibility.

Persons labouring under fevers, especially of the typhous kind, often become deaf. When this comes on

along with other signs of an oppressed brain, and a great prostration of strength, it may be a very bad sign; but for the most part it is a very good one, even though accompanied with some degree of torpor or sleepiness.

A very common disease in the sense of hearing is when certain sounds, like those of a drum, a bell, the falling of water, &c. are heard without any tremor in the air, or without a sound person's hearing any thing. This disease is called *tinnitus aurium*, of which various kinds have been observed. For the most part it is a very slight transient disorder; but sometimes it is most obstinate, long-continued, and troublesome. It sometimes arises from the slightest cause, such as any thing partially stopping up the meatus auditorius or Eustachian tube itself, so that access is in part denied to the air; whence it happens that the latter strikes the membrane of the tympanum, or perhaps the interior parts, unequally, and with too much force. Hence *bombi*, a kind of tinnitus, are heard even by the most healthy when they yawn.

A much more frequent and troublesome species of tinnitus accompanies many diseases both of the febrile and nervous kind. This is occasioned partly by the increased impetus of the blood towards the head, with an increase of sensibility in the nervous system itself, so that the very beatings of the arteries are heard; and partly from the increased sensation and mobility of the nerves and muscles of the labyrinth: whence it happens, that the parts which ought to be at rest until excited by the tremor of the air, begin to move of their own accord, and impart their motion to other parts which are already in a morbid state of too great sensibility.

A tinnitus sometimes arises from any vehement affection of the mind; sometimes from a disorder in the stomach; sometimes from a rheumatic disorder affecting the ears and head; or from a catarrh, which commonly affects the tube. Sometimes, however, the tinnitus alone affects the patient; and even this is a disease of no small consequence. These various causes, however, both of this and other disorders of the hearing, are often very difficult to be distinguished, as well on account of the inaccessible situation of the organ, as on account of the little knowledge we have of its action. But from whatever cause it arises, both this and the other various affections of the hearing can neither be cured certainly nor easily.

Concerning the nature of the sense of sight, the reader may consult the articles ANATOMY and OPTICS. Of this sense some slight disorders, or rather varieties, are often observed. Those persons are called *short-sighted* who cannot see distinctly unless the object be very near them. This disorder arises from too great a refraction of the rays by reason of their being too soon collected into a focus by the crystalline lens, and diverging again before they fall upon the retina, by which means they make an indistinct picture upon it. The most usual cause is too great a convexity of the eye or some of its humours, as too prominent a cornea. It is a disorder common to young people, which is sometimes removed when they grow older. As soon as the first approaches of short-sightedness are observed, it is supposed it may be obviated by the person's

External
Senses.81
Sight.

External
Sense.External
Senses.

accustoming himself to view remote objects, and keeping his eyes off very small and near ones; as, on the contrary, it may be brought on by the opposite custom; because the eye accommodates itself somewhat to the distances of those objects which it is accustomed to view. But a concave glass, which causes the rays of light to diverge more than naturally they would before falling upon the cornea, is the most simple and certain remedy.

Long-sighted people are those who cannot see an object distinctly unless it be at a considerable distance from them. This arises from causes contrary to the former; namely, the eye being too flat, so that there is no room for refracting the rays and bringing them into a focus. Hence this defect is common in old people, and remedied by the use of convex glasses.

Those are called *nyctalopes* who see better with a very weak than with a strong light. It is a defect very seldom to be met with in the human race, though every person is sensible of it who hath been long kept in the dark and is then suddenly brought into the light. The disease arises from too great a sensibility of the retina, and the pupil being too open.

The sight is liable to many and grievous disorders. It is sharpened beyond measure, so that the person either perceives nothing distinctly, or with great pain, from the same causes that induce a similar disorder in the other senses; namely, excessive sensibility in the general habit of body; or a particular state of the brain common in phrenitis, or even in those afflicted with fevers arising from inflammation or too great excitement; though more frequently from the condition of the eye itself, one becomes unable to bear the light. The inflammation of the tunica adnata, and the forepart of the sclerotica, is communicated to the back parts of it, and from thence to the choroides and retina itself. Hence the light becomes intolerable, and vision is attended with pain and great irritation, sometimes inducing or augmenting a delirium.

The sense of seeing is made dull, or even totally abolished, by age; the aqueous humour not being supplied in sufficient quantity, and the cornea and lens, or the vitreous humour, becoming shrivelled or decayed. It may likewise happen from the cornea becoming dry and opaque; which is to be imputed to the languid motion of the blood, and to great numbers of the small vessels being obstructed or having their sides concreted;—or from the crystalline lens becoming yellow like amber, and the retina itself less sensible, for old age diminishes every sensation. It is totally abolished by injuries of the brain, the optic nerve, or the retina, even though the structure of the organ should remain sound. This disease is called an *amaurosis*; and is easily known by the dilatation and immobility of the pupil, the humours of the eye remaining clear. It is commonly owing to congestion of blood; and sometimes, where no congestion of blood can be shown, to mere torpor of the nerves. If it be only a torpor of part of the retina, we see black spots in those things at which we look; or flies seem to pass before our eyes, a very bad sign in fevers, and almost always mortal. The sight is abolished also by the obscurity or opacity of any of the parts through which the rays ought to pass and be refracted; as if the cornea lose its transparency by being covered with

spots; or the aqueous humours become corrupted with blood, serum, or pus; or the lens (which often happens and which is called a *cataract*) becomes of a grey or brown colour, or the vitreous humour be in like manner corrupted; or lastly, when all the humours being dissolved, confused, and mixed together, by inflammation and suppuration, either do not suffer the light to pass at all, or to pass imperfectly and unequally; whence either no image is formed on the retina, or it appears obscure, distorted, imperfect, and ill-coloured.

The sight is also depraved, when things appear to it of a colour different from their own, or even in another situation and of another shape than they ought to have. This happens from the humours being tinged with any unusual colour, as is said to happen in some instances of jaundice; or from an extravasation and mixture of the blood with the aqueous humour. A surprising depravation also, or constant and perpetual defect of vision, is not unfrequently observed in men otherwise very healthy, and who see quite clearly; namely, that they cannot distinguish certain colours, green, for example, from red*. Another depravation is, when, without any light being admitted to the eyes, sparks, small drops of a flame or gold colour, and various other colours, are observed to float before us. This is generally a very slight and transient disorder, common to those whose constitutions are very irritable; and arises from the slight impulse, as it would seem, on the retina, by the vessels beating more vehemently than usual. A fiery circle is observed by pressing the eye with the finger after the eye-lids are shut. The same reason, perhaps, may be given for those sparks which are seen by persons labouring under the falling-sickness, and increasing to the size of an immense and luminous beam before they fall down in convulsions. A similar beam those who have recovered from hanging or drowning testify that they have observed: for by reason of the respiration being suppressed, the vessels of the head swell and compress the whole brain and nervous parts of the head. Sparks of the same kind, and these too of no good omen, are observed in patients labouring under a fever, where a phrenitis or fierce delirium is at hand: and likewise in those who are threatened with palsy, apoplexy, or epilepsy.—A distinct but false perception, namely of visible things which do not exist, is to be imputed to some injury of the brain, to madness or a delirium, not to any disease of the eye.

A very frequent defect of vision remains to be mentioned; namely, squinting. A person is said to squint who has the axes of the eyes more oblique than usual, and directed to different points. Hence a great deformity, and often an imperfect and confused vision by which the objects are sometimes seen double. It is an evil for the most part born with the person, and often corrected by those attempts which an infant makes to see more pleasantly and distinctly; and this even without being conscious of its own defects. It is also easily learned, especially in infants, even without their own knowledge, by that kind of imitation which has a great influence over the human race, especially in their tender years.—It is by no means, however, so easily unlearned.

Squinting is frequently occasioned by a spasm, palsy, rigi-

* See the article COLOURS (in capacity of distinguishing).

External
Senses.

rigidity, &c. of the muscles which manage the eye; by epilepsy; by certain diseases of the head, the hydrocephalus especially; or by any great injury done to the head. Sometimes, though very rarely, it comes on suddenly without any known cause. It is very probable, however, that squinting often arises from a fault of the retina, when their central points, for instance, and those similarly placed with respect to the centre, do not agree. In this case there must be a contortion of the eye, that the object may not be seen double. This seems also to be the reason why squinting is horribly increased when the person brings the object near his eye in order to view it more perfectly. Or if the central point of either, or both, of the retina be insensible, or nearly so, it is necessary for the person to distort his eyes that he may have any distinct vision of objects. If the optic nerve had not entered the retina obliquely, but passed directly through its centre, we would all either have squinted or seen double.

82
Vertigo.

Physicians have referred to the sense of vision that most troublesome sensation which we call a *vertigo*: though it seems rather to belong to that of feeling, or of consciousness; for in many instances the disorder is not removed either in the dark or by shutting the eyelids. The vertigo takes place when external objects really at rest seem to reel, to whirl round, to tremble, or to move in any manner of way. If the disorder be very violent, the person is neither able to see, on account of a dimness of sight; nor can he stand, as the powers fail which ought to govern the limbs. A nausea also usually accompanies the vertigo, and the one generally produces the other.

This disorder is observed to be both the symptom and forerunner of some dangerous diseases; such as apoplexy, epilepsy, hysteria; hæmorrhages from the nose and other parts; suppressions of the menses; plethora; fevers, as well such as are accompanied with debility as those in which there is an increased impetus of the blood towards the head. An injury done to the head also, but rarely one done to the eyes unless in so far as it affects the whole head, brings on a vertigo. A vertigo may be likewise produced by a very great and sudden loss of blood or other fluid; by debility; syncope; various diseases of the alimentary canal, of the stomach especially; poisons admitted into the body, particularly of the narcotic kind, as opium, wine, &c. and hence vertigo is a symptom of every kind of drunkenness. Various motions also, either of the head or the whole body, being tossed in a ship, especially if the vessel be small and the sea runs high, produce a vertigo. In these and similar examples, the unusual and inordinate motions of the blood are communicated to the nervous parts which are in the head; or these being affected by sympathy from the neighbouring parts, produce a confused sensation as if of a rotatory motion. Nay, it is often produced from an affection of the mind itself, as from beholding any thing turned swiftly round, or a great cataract, or looking down a precipice, or even by intense thought without looking at any thing.

Though a vertigo be for the most part a symptom and concomitant of other diseases, yet it is sometimes a primary disease, returning at intervals, increasing

Nº 202.

gradually, and equally impeding and destroying the functions of the body and mind.

After having treated of the external senses, doctor Gregory next proceeds to consider those properly called *internal*; which are, the *memory*, the *imagination*, and the *judgment*. The first is lessened, disturbed, or even totally destroyed, in many diseases, especially those which affect the brain; as the apoplexy, palsy, internal tumors of the head, external violence applied, fevers, especially those in which there is an increased motion of the blood towards the head, or where the brain is any other way very much affected. It is very rarely, however, depraved in such a manner that ideas are not represented to the mind in their proper order; or if at any time such a disorder occurs, it is considered rather as a disorder of the imagination, or as a delirium, than a failure of the memory. The mind is said to be disordered when the perceptions of memory or imagination are confounded with those of sense, and of consequence those things believed to be now present which are really past or which never existed; or when the sense of the person concerning ordinary things is different from that of other people. The general name for such disorders is *vesania*: if from fever, it is called *delirium*. A general fury without a fever, is called *mania*, or *madness*: but a partial madness, on one or two points, the judgment remaining sound in all other respects, is called *melancholia*. There is, however, no exact and accurate limits between a sound mind and madness. All immoderate vivacity borders upon madness; and, on the other hand, a sorrowful and gloomy disposition approaches to melancholy.

Delirium accompanies fevers of many different kinds. Sometimes it is slight, easily removed, and scarce to be accounted a bad sign. Often, however, it is very violent, and one of the very worst of signs, requiring the utmost care and attention.

A delirium is either fierce or mild. The fierce delirium is preceded and accompanied by a redness of the countenance, a pain of the head, a great beating of the arteries, and noise in the ears; the eyes in the mean time looking red, inflamed, fierce, shining, and unable to bear the light; there is either no sleep at all, or sleep troubled with horrid dreams; the wonted manners are changed; an unusual peevishness and ill-nature prevail. The depravation of judgment is first observed between sleep and waking, and by the person's crediting his imagination, while the perceptions of sense are neglected, and the ideas of memory occur in an irregular manner. Fury at last takes place, and sometimes an unusual and incredible degree of bodily strength, so that several people can scarce keep a single patient in his bed.

The mild delirium, on the contrary, is often accompanied with a weak pulse, a pale collapsed countenance, and a vertigo when the patient sits in an erect posture; he is seldom angry, but often stupid, and sometimes remarkably grieved and fearful. The loss of judgment, as in the former kind, is first perceived when the patient is half awake; but a temporary recovery ensues upon the admission of the light and the conversation of his friends. The patient mutters much to himself, and attends little to the things around him; at last, becoming quite stupid, he neither feels the

Internal
Senses.83
Memory.84
Delirium.

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Delirium. sensations of hunger or thirst, nor any of the other propensities of nature, by which means the urine and excrements are voided involuntarily. As the disorder increases, it terminates in subsultus tendinum, tremors, convulsions, fainting, and death. The other species of delirium also frequently terminates in this, when the spirits and strength of the patient begin to fail.

The symptoms accompanying either of these kinds of delirium show an unusual, inordinate, and unequal motion of the blood through the brain, and a great change in that state of it which is necessary to the exercise of the mental powers. It is sufficiently probable, that an inflammation of the brain, more or less violent and general, sometimes takes place, although the signs of universal inflammation are frequently slight. This we learn from the dissection of dead bodies, which often show an unusual redness of the brain or of some of its parts, or sometimes an effusion or suppuration.

The state of the brain, however, may be much affected, and a delirium induced, by many other causes besides the motion of the blood. In many fevers, typhus, for instance, the nervous system itself is much sooner and more affected than the blood; and though the morbid affections of the nervous system are as invisible to the senses as the healthy state of it, the symptoms of its injuries plainly show that its action, or *excitement* as some call it, is unequal and inordinate. In this way, too, a delirium is produced by several poisons.

⁸⁵
Melancholy and mania.

The pathology of melancholy and mania is much more obscure; as coming on without any fever, or disturbance in the blood's motion. Often also they are hereditary, depending on the original structure of the body, especially of the brain; the fault of which, however, cannot be detected by the nicest anatomist. But it is well known, that various diseases of the brain, obstructions, tumors, either of the brain itself, or of the cranium pressing upon it, any injury done to the head, and, as some physicians relate, the hardness and dryness of the brain, and some peculiar irritations affecting the nervous system, are capable of bringing on this malady. And indeed so great are the irritations affecting the nervous system in mad people, that they often sleep little or none for a long time.—Yet even this so defective and imperfect knowledge of the diseases of the brain and nerves, is by no means free from difficulties. For though we know that the brain, or a certain part of it, is hurt, or that it is irritated by a swelling, or a pointed bone growing into it, nobody can foretell how great, or what may be the nature of the malady from such a hurt: for examples are not wanting of people who, after losing a large part of the brain, have recovered and lived a long time; or of those who have perceived no inconvenience from a large portion of that viscus being corrupted, until at length they have fallen suddenly down and died in convulsions.

⁸⁶
Idiotism.

Another disease of the internal senses, quite different from these, is *fatuity* or *idiotism*. Those are called *idiots* who are destitute either of judgment or memory, or else have these faculties unequal to the common offices of life. A kind of idiotism is natural and common to all infants; neither is it to be accounted a disease: but if it lasts beyond the state of infancy,

Vol. XI. Part I.

it is a real disease, and for the most part incurable. It has the same causes with the other diseases of the internal senses: although these can scarcely be detected by the eye or by the knife of the anatomist. It frequently accompanies, or is the effect of, epilepsy. Hence, if the epilepsy derives its origin from causes not seated in the head, as from worms lodging in the intestines, the fatuity may be cured by dislodging these, and removing the epilepsy. It is not unlikely that the fatuity of children, and the dotage of old men, may arise from the brain being in the former too soft and in the latter too hard.

Idiotism.

The muscular power may be diseased in a great number of ways. The mobility itself may be too great; but this must be carefully distinguished from vigour. By mobility is meant the ease with which the muscular fibres are excited into contraction. The vigour, on the other hand, is that power with which the contraction is performed. They are sometimes joined, but more frequently separate, and for the most part the excesses of each are owing to contrary causes.

⁸⁷
Disorders in the muscular power.

Too great mobility is when motions are excited by too slight a stimulus, or when too violent motions are produced by the customary stimulus. A certain habit of body, sometimes hereditary, renders people liable to this disease. Women have a greater share of mobility than men have. Infants have a great deal of mobility, often too great; youth has less than infancy, but more than man's estate; though old age has commonly too little. A lazy, sedentary life, full diet, a suppression of the usual evacuations, fulness of the blood-vessels, and sometimes their being suddenly emptied, laxity, flaccidity of the solids in general, but sometimes too great a tension of the moving fibres, the use of diluents, especially when warm, or heat applied in any manner, produce too great mobility. And this may be either general or particular, according as the causes have been applied to the whole body or only to a part of it.

⁸⁸
Mobility.

Vigour in general is rarely morbid; although sometimes certain muscular parts appear to have too great strength. In maniacs and phrenitics, an immense strength is observed in all the muscles, especially in those that serve for voluntary motion; which is not unjustly reckoned morbid. The reason of this excess is very obscure; however, it is plainly to be referred to a diseased state of the brain.

⁸⁹
Vigour.

A more frequent and more important excess of vigour is observed in those muscular fibres that do not obey the will, such as those which move the blood. Its circulation is thus often increased, not without great inconvenience and danger to the patient. But a slighter excess of this kind, pervading the whole body, renders people apt to receive inflammatory diseases, and is usually called a *phlogistic diathesis*. But this is better observed when local, as in inflammation itself.

Too great vigour of the muscular fibres may arise from the nervous power increased beyond measure, as in mania, phrenitis, or violent affections of the mind; from too great a tension of the fibres, by which they more easily and vehemently conceive motions, as of the arteries when filled with too much blood; from catching cold, by being exposed either to cold or heat, as usually happens in the spring; or lastly, though the nervous power and tension of the fibres

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Disorders
in the Mus-
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should not at all be changed, their action may become too great, from a stimulus more violent than usual being applied, or from the usual stimulus if the fibres themselves have already acquired too great a share of mobility.

90
Torpor.

The opposite to too great mobility is torpor, and to too great vigour is debility. Torpor is such a diminution of mobility as renders the parts unequal to their functions. It arises from causes directly opposite to mobility; such as, in the first place, a harder and more rigid contexture of the parts themselves, or even sometimes from one too lax and flaccid; from old age; from some peculiar temperament of body, such as one phlegmatic, frigid, or insensible; too great and incessant labour, cold, spare diet, and an exhausted body. This evil is the more to be dreaded, because, the powers of the body being deficient, nature is neither able to make any effort of herself, nor are the remedies, in other cases the most efficacious, capable of affording her any assistance.

91
Debility.

Debility takes place, when the motion of the muscles, either voluntary or involuntary, is not performed with sufficient strength. A greater or lesser share of debility, either general or of some particular part, accompanies almost all diseases, and is indeed no small part of them: for it is hardly possible that a disease can subsist for any length of time without inducing some degree of debility. When a state of debility is induced, it renders a man obnoxious to innumerable disorders, and throws him as it were defenceless in their way. It often depends on the original structure of the body, so that it can be corrected neither by regimen nor medicines of any kind. A different degree of strength also accompanies the different ages of mankind; and thus, in some cases, debility cannot be reckoned morbid. But a truly morbid and unwonted debility arises from the nervous force being diminished; from diseases of the brain and nerves, or of the muscles through which they are distributed; from a decay of the nerves themselves; from a want of the due tension of the fibres, or the fibres themselves becoming torpid; from the body exhausted by spare diet, want, evacuations; or lastly, from diseases affecting the whole body, or some particular parts of it.

92
Palsy.

The highest degree of debility, namely, when the strength of the muscles is altogether or nearly destroyed, is called *paralysis* or *palsy*; and is either universal, or belonging only to some particular muscles. An universal palsy arises from diseases of the brain and nerves, sometimes very obscure, and not to be discovered by the anatomist; for the nervous power itself is often deficient, even when the structure of the nerves remains unhurt: yet often a compression, obstruction, or injury of the vessels, extravasation of blood, or serum, collections of pus, swellings, &c. are discovered. It frequently arises from certain poisons acting on the nerves; from the fumes of metals; from the diseases of parts, and affections of the muscles, very remote from the brain, as in the colic of Poitou. A palsy of single muscles, but less perfect, often arises without any defect of the brain or nerves, from any violent and continued pain, inflammation, too great tension, relaxation, rest, or destruction of the contexture of the parts, such as commonly happens after the

rheumatism, gout, luxations, fractures of the bones, and ischuria.

Disorders
in the Mus-
cular Power

An *universal* palsy, however, as it is called, seldom affects the whole body, even though it should originate from a disease of the brain. We most commonly see those who are paralytic affected only on one side, which is called an *hemiplegia*. It is said that the side of the body opposite to the diseased side of the brain is most commonly affected. If all the parts below the head become paralytic, it is called a *paraplegia*. In these diseases the senses for the most part remain; though sometimes they are abolished, and at others rendered dull. Sometimes, though rarely, and which is an exceeding bad symptom, the motion, sensation, pulse, and heat of the paralytic limbs are lost; in which case the arteries themselves become paralytic. A palsy of the whole body, as far as regards the voluntary motions, with anæsthesia and sleep, is called an *apoplexy*. This proceeds from some injury of the brain: though a state very similar to it is induced by narcotics, opium, wine itself, or any generous liquor taken to excess; and lastly, by breathing in air corrupted by noxious impregnations, such as a large proportion of carbonic acid, hydrogenous gas, or any similar active aeriform fluid.

Another disease to which muscular motion is liable, and that neither slight nor unfrequent, is called *spasm*.⁹³ This is a violent and irregular motion of the muscles. Of spasms there are two kinds, the tonic and clonic. The latter is frequently called a *convulsion*; in order to distinguish it from the other, which is more peculiarly called *spasm*.

Spasm therefore is a violent, constant, and preternatural contraction of the muscular fibres; but a convulsion is an unusual and violent contraction alternated with relaxation. People are rendered liable to spasm by too sensible an habit of body, or too great mobility; and hence it is a disease common in women, in infants, and in weak, luxurious, lazy, and plethoric people. It is brought on those already predisposed to it, by any kind of stimulus applied to the brain, or to any nerve, muscle, or nervous part connected with it: of which we have examples in dentition; worms lodged in the intestines, and irritating them; any acrid matter infecting the blood, or much affecting the stomach and intestines; the irritation of any nerve, or of the brain itself, by an exostosis, swelling, too great fulness of the vessels, pain, vehement affections of the mind, sudden evacuation, or poisons admitted into the body. Frequently, however, the malady originates from slight causes, little known, and not easily observed.

Spasm is both the cause and effect, and frequently constitutes the greatest part, of most diseases. It is often very difficult either to be known or cured; because it is so multiform, and produces as many different symptoms as there are organs affected; of which it surprisingly disturbs, impedes, or increases the functions. It is a disease seated in the original stamina of the constitution; and neither to be removed by slight remedies, nor in a short time.

With regard to sleep, Dr Gregory observes, that its Sleep.⁹⁴ use is sufficiently apparent from the effects which it produces in the body. It restores the powers both of mind and body when exhausted by exercise, giving vigour to the one, and restoring its wonted alacrity to the

Disorders
of Sleep.Disorders
of Sleep.

the other. It renders the muscles again active and moveable, after they have become wearied, rigid, painful, and trembling by hard labour. It moderates the quickness of the pulse, which usually increases at night, and brings it back to its morning standard. It seems also to assist the digestion of the aliment; lessens both the secretions and excretions; and renders the fluids thicker than otherwise they would be, especially in a body endowed with little sensibility or mobility. Hence sleep is not only useful, but absolutely necessary for preserving life and health; and is a most excellent remedy both for alleviating, and totally removing, a great many diseases.

Want of sleep is hurtful in a great many different ways, especially to the nervous system. It renders the organs of sense both external and internal, as well as those of every kind of motion, unfit for performing their offices. Hence the sensations are either abolished, or become imperfect or depraved; and hence imbecility of mind, defect of memory, a kind of delirium, mania itself, pain of the head, weakness of the joints, an imperfect or inordinate action of the vital organs, quickness of pulse, heat, fever, depraved digestion, atrophy, leanness, and an increase or perturbation of the secretions and excretions.

Sleep may be prevented both in healthy and sick people from various causes; such as strong light, noise, pain, anger, joy, grief, fear, anxiety, hunger, thirst, vehement desire, motion of the body, memory, imagination, intense thought, &c. On the other hand, sleep is brought on by a slight impression on the organs of sense, or none at all; by the humming of bees, the noise of falling water, cold and insipid discourse; or lastly, by such an exercise of the memory as is neither too laborious nor disturbing to the mind.—Too great an impulse of the blood towards the head, such as often happens in fevers, prevents sleep; but a free and equal distribution of the blood through the whole body, especially the extreme parts, frequently brings it on. Whatever weakens the body also favours sleep; and hence various kinds of evacuations, the warm bath, fomentations, sometimes heat itself, are useful for promoting it. It also comes on easily after taking food, or indulging venery; the violent sensation being then quieted, and the body itself somewhat weakened. Cold produces a deep sleep of long continuance, not easily disturbed, and often terminating in death. Lastly, there are certain substances which, when applied to the body, not only do not excite the nervous system, but plainly lay us asleep, and render us unfit for sensation: of this kind are those called *narcotics*, as opium and the like; among which also we may reckon wine taken in too great quantity. Lastly, watching itself is often the cause of sleep; because while a man is awake he always more or less exercises the organs of his body, by which the nervous influence is diminished, and thus the more violently the body is exercised, in the same proportion is the person under a necessity of sleeping.

Sleep is deficient in many diseases; for there are few which do not excite pain, anxiety, or uneasiness, sufficient to prevent the approach of sleep, or to disturb it. Fevers generally cause those who labour under them to sleep ill; as well on account of the uneasiness which accompanies this kind of diseases,

as by reason of the impetus of the blood towards the head being frequently increased; and likewise from the stomach being disordered, loaded with meat, or distended with drink. Hence also we may see the reason why many hypochondriac and hysterical patients sleep so ill; because they have a bad digestion, and their stomach is disposed to receive many though frequently slight disorders; the slightest of which, however, is sufficient to deprive the patient of rest, provided the body be already irritable, and endowed with too great a share of mobility.

Want of sleep will hurt in diseases as well as in health; and for the same reason; but in a greater degree, and more quickly, in the former than in the latter; and is therefore not only a very troublesome symptom of itself, but often produces other very dangerous ones.

Too much sleep, on the other hand, produces many mischiefs, rendering the whole body weak, torpid, and lazy; and it even almost takes away the judgment. It also disturbs the circulation, and diminishes most of the secretions and excretions. Hence plethora, fatness, flaccidity, and an inability for the common offices of life.—The causes of this excess are, either the usual causes of sleep above-mentioned increased beyond measure, or some fault in the brain, or a compression of it by an extravasation of the humours; or sometimes, as it would seem, from great debility produced by an unusual cause, as in those who are recovering from typhous fevers and other diseases. In these examples, however, this excess of sleep is by no means hurtful; nor even, perhaps, in those cases where an excess of grief continued for a long time, or a great fright, have produced a surprising and unexpected somnolency. Lastly, many people have accustomed themselves, and that not without a great deal of hurt to their constitutions, to sleep too much. Nor are there examples wanting of some who have passed whole days, and even months, in sleep almost uninterrupted.

With regard to the manner in which the circulation of the blood is performed, and the various principles of which it is composed, see the articles BLOOD, and ANATOMY. As for the disorders to which the blood and its circulation are subject, Dr Gregory observes, that in our younger years the veins are much more dense, firm, and strong, than the arteries; but the latter, by reason of the continual pressure upon them, and the strength which they exert, become daily more firm, hard, and strong, until at last they equal or exceed the veins themselves in strength; and it is not uncommon in old men to find some part of the arteries converted into an horny substance, or even into a solid bone. Hence in the state of infancy the greatest part of the blood is contained in the arteries, and in old age in the veins; an affair indeed of no small moment, as it shows the reason in some measure of the state of increase and decrease of the body. Besides, if any disease happens from too great a quantity of blood, it thence appears that it must show itself in young subjects in the arteries, and in old ones in the veins; and this is the reason of many diseases which accompany certain periods of life.

In most, if not in all species of animals, the arteries of the females are much more lax and capacious when compared with the veins, and the veins much less, than

Disorders
of Circula-
tion.

in the males of the same genus. The design of nature in this conformation, is probably that they may be the better able to nourish the fœtus in their womb. The same likewise seems to be the reason why women are more inclined to plethora than men; and to this greater capacity of the arteries and smallness of the veins are we to ascribe that beauty and elegant shape of the arms in women, not disfigured or livid with veins as in men.

The blood is also distributed in various proportions to the different parts of the body, and that proportion too differs at different periods of our lives. At first an immense quantity is sent to the head, because that part of the body is first to be evolved and fitted for its offices: but as soon as the parts begin to make a considerable resistance to the efforts of the blood, and the vessels cannot easily be further dilated, it is necessarily sent off to other parts; by which means the rest of the body increases in bulk, and becomes fitted for performing its proper functions. The effect of this change is also very soon observed, namely, when none of the blood passes through the navel, and of consequence a greater quantity is sent by the iliac arteries to the inferior extremities. These, though so small and slender in the fœtus, increase very suddenly; so that often in not many months the child can not only stand on its feet, but even walk tolerably well.

96
Pulsation
of the arte-
ries.

Physicians are wont to judge of the state of the circulation by the pulse; which indeed is very various, as well with regard to its frequency, as to the strength and equality of its strokes and intervals.—Its common quickness in a healthy grown-up person is about 70 strokes in a minute. In a fœtus, perhaps, it is more than double; and in an infant a few months old, hardly less than 120. As we grow up, this quickness gradually diminishes; so that in extreme old age it sometimes does not exceed 50, or is even slower. This rule, however, is not without exceptions: for many, especially those of an irritable habit, have the pulse much quicker; while others, even in the vigour of their age, have the pulse remarkably slow. It is for the most part somewhat quicker in women than in men.

The pulse is also rendered quicker, both in a healthy and diseased body, by the application of stimuli of many different kinds. Exercise especially, by accelerating the return of the blood through the veins, increases the quickness of the pulse to a surprising degree. Various kinds of irritations affecting the nervous system, as intense thinking, passions of the mind, pain, heat, stimulating medicines, wine, spices, &c. likewise produce the same effect. The acrimony of the blood itself also is thought to quicken the pulse.

When a person first awakes in the morning, the pulse is slow, but becomes quicker by degrees on account of the many irritating matters applied to the body. Its quickness is increased after taking food, especially of the animal kind, or such as is hot or seasoned with spices. In the evening a slight fever comes on, for which rest and sleep are the remedy. These things, however, are scarce to be observed in a healthy person, but are very evident in one that is feverish, especially when the disease is a hectic.—Again, even debility itself often renders the pulse quicker than

usual; because the ventricle of the heart not being quite emptied, it is the sooner dilated again, and of consequence contracts the sooner. For this reason a physician can never judge of the strength of the circulation from the frequency of the pulse.

Lastly, in all fevers, however different from one another, the pulse is found to be too quick, partly perhaps from debility, partly from the acrimony of the fluids, and partly from the repulsion of the blood from the surface of the body, and the accumulation of it in the large vessels where it acts as a stimulus; though it must be owned, that a great deal of this is obscure, if not totally unknown; nor in truth are we able to understand in what manner the *autocrateia* acts with regard to the frequency of the pulse.

The pulse is seldom observed too slow, unless when the mobility of the body is much diminished, as in decrepid old age, or from a compression or disease of the brain; but a greater compression of the brain usually produces a still more remarkable slowness of the pulse, as in the hydrocephalus, apoplexy, &c.—Sometimes also the pulse is too slow in those who are recovering from tedious fevers. But this is a matter of little moment, and seems to be owing to some kind of torpor. Indeed it has generally been considered as a mark of a thorough and complete solution of the fever; for it is commonly observed, that when this state of the pulse takes place, the patient seldom suffers a relapse.

While the frequency of the pulse continues the same, its strokes may be either full, great, strong, and hard; or soft, small, and weak. A full, great, and strong pulse takes place when the ventricle strongly and completely empties itself; throwing out a great quantity of blood into the arteries, which fully distends them and stimulates them to a strong contraction. A pulse of this kind is common in strong healthy men, and is seldom to be accounted a symptom of disease. But if it be too strong, and strike the finger of the person who feels it violently and sharply, it is called a *hard pulse*. This hardness is produced by a sudden and violent contraction of the heart and arteries, which distends even the remote branches, as those of the wrist, too suddenly and smartly, and excites them also to sudden and violent contractions.

A hard pulse therefore denotes too great an action of the heart and arteries. It may arise from various causes: in the first place, from too great a tension of the vessels; for instance, from their being too full, and by that means more prone to motion, and the more fit for receiving violent motions. It may arise also from too great a density and firmness of the solids; and hence it is most frequent in cold countries, among strong robust people, and such as are accustomed to hard labour. It may likewise arise from various causes irritating the whole nervous system, or only the heart and arteries. Lastly, it accompanies many fevers, as well as most inflammatory disorders, whether the inflammation arises from a general stimulus applied to the whole body, or from the irritation of particular parts, by degrees extended over the whole body. In such a state of the circulation, the patient frequently stands in need of blood-letting, and almost always bears it well.

Disorders
of Circula-
tion.

A small, weak, and soft pulse is generally owing to causes opposite to the foregoing, and indicates a contrary state of the circulation and nervous system. It frequently requires stimulants; nor does it generally require blood-letting, or easily bear it. Sometimes, however, a pulse of this kind is observed even in the case of a dangerous inflammation, of the stomach for instance, or intestines. But in these and the like examples, we ought to attend to the nature of the malady, much more than to the state of the pulse.

The pulse is said to intermit, when the stroke does not return after the usual interval, and perhaps not till after twice, thrice, or four times the usual space. A pulse of this kind seems to be almost natural and constant in some animals, and is common to some men even in the most perfect health; and if these happen to be seized with a fever, the pulse sometimes becomes equal, nor can the disease be removed before the intermission has returned.

Moreover, in some people, though their pulse beats equally while in health, yet the slightest illness makes it intermit; and in others, especially those who have a great deal of mobility in their constitution, such as hypochondriac and hysteric people, the intermission of the pulse is felt, without applying the finger to the artery, merely by the uneasiness which they perceive in their breasts during those intervals in which the pulse is deficient. An intermittent pulse likewise occurs in many diseases of the breast, especially when water is collected in it; and the like happens in the end of all diseases, especially fevers, when the strength is nearly exhausted, and death approaches, of which it is frequently the forerunner.

An intermitting pulse therefore seems to arise from an unequal influx of the nervous power into the heart, or from the decay and exhaustion of the nervous power, by which means the heart is not able to contract till it has been distended beyond its due pitch. Or lastly, it may arise from diseases of the organ itself, or the neighbouring parts; from swellings, water, &c. pressing upon them, and impeding the action of the heart: which indeed is a very dangerous disorder, and almost always mortal.

Many other variations of the pulse are enumerated by physicians, but most of them uncertain, and not confirmed by experience. We shall therefore now consider the motion of the blood, which may be either too great, too small, or irregular.

A quick pulse, *ceteris paribus*, produces a more rapid circulation, because the sooner that the ventricle of the heart is emptied, the more quickly is the blood thrown into the arteries; and their actions must answer to this stronger stimulus. Hence exercise, heat, stimulants, plethora, every kind of irritation, passions of the mind, and fever, increase the circulation. The effect of this increase is a distension of the vessels, a stimulus applied to the whole body, an increase of heat, and often a debility. The secretion of sweat is increased while the other secretions are diminished, and the various functions of the body impeded; thirst comes on, the appetite is lost, the fat consumed, and a disposition to putrescency introduced. Sometimes the smaller vessels are burst; whence effusions of blood and hæmorrhages. But we are by no means to forget, that this violent motion of the blood, however hurtful it

may seem, is among the best remedies made use of by nature in curing many diseases.

The motion of the blood is diminished, especially by debility, torpor, the want of irritation or of exercise: the same thing happens to all the humours, if there be any obstruction in the vessels, or any cause by which their return is hindered or rendered more difficult. Thus, from the very weight of the blood itself, if a person has stood long on his feet, the humours return more slowly from the inferior extremities. Any disease of the heart and arteries also, as an aneurism, contraction, ossification, must necessarily obstruct the circulation. The same thing happens from obstructions of the veins, or interrupted respiration, by which the passage of the blood through the lungs to the left side of the heart is impeded.

But, from whatever causes this diminution of the circulation takes place, the bad consequences are perceived chiefly in the veins, because in them the blood always moves more slowly than in the arteries. Hence varices, and congestions of blood, especially in those parts of the body where the veins are destitute of valves, and of consequence where the motion of the muscles cannot assist the circulation. Hence also arise dropsies from an impeded or languid motion of the blood; because the resistance of the veins being increased, the blood is received into them with the greater difficulty, and more of the thin humour is driven into the exhaling vessels, and by them deposited in such quantities as cannot be reabsorbed by the lymphatics. These diseases, as well as all others proceeding from defects of the circulation, are also more difficult of cure than others, because all the vital powers are weakened at the same time.

Another disorder of the circulation is where the blood is carried to one part of the body in too great quantity, by which means the other parts are deprived of their due proportion. This irregular distribution of the vital fluid frequently arises from a stimulus applied to the part itself, or to the brain, or at length acting on the mind, which, according to the laws of sympathy, produces a certain and definite distribution of the blood. It arises also not unfrequently from a spasm taking place in some other parts, which drives the blood out of its ordinary course.

In proportion to this irregularity of the circulation are the consequences; heat, swelling, redness, inflammation, rupture of vessels, hæmorrhages, effusions, destruction, corruption, and suppuration of the cellular texture and adjoining parts, &c. Even this evil, however, nature often converts into an excellent remedy; and physicians, following her steps, frequently attempt to direct the distribution of the blood in particular diseases, well knowing that a change in the distribution of the blood is frequently efficacious either for radically curing some diseases or relieving their most urgent symptoms.

Lastly, some disorders in the motion of the heart itself, and those of no small consequence, remain yet to be taken notice of, namely, palpitation and syncope. A palpitation is a violent and irregular action of the heart, such as for the most part is perceived by the patient himself, and that not without a great deal of uneasiness and oppression at his breast; and is also manifest to the by-standers if they apply their hands, or look.

Disorders
of Circula-
tion.

Disorders
of Circula-
tion.

look at his naked breast; the pulse of the arteries in the mean time being weak, unequal, and intermitting. This is a spasmodic disorder; and is induced by various causes affecting either the nervous system in general, or the heart in particular. Every disease of the organ itself, such as a constriction of its valves and blood-vessels, an ossification, enlargement, or polypus, hindering the free action of the heart, and evacuation of blood from it, are capable of exciting it to violent and unusual contractions. The same effect will also follow plethora, or too violent an impulse of the blood, &c. The heart will likewise frequently palpitate from a violent excitement of the nervous system, especially where the constitution is endowed with a great deal of mobility. Hence palpitations from any affection of the mind, and in hysterical women. Palpitation may likewise arise from an affection of the stomach, occasioned by worms, a surfeit, flatus, or stimulation by various acrid substances. It frequently also accompanies the gout when driven back, or even when a fit is coming on. Sometimes it arises from debility, whatever may be the cause; frequently from any difficulty in breathing; and many of these causes may be joined at the same time, or some of them produce others.

Hence we may see why the evil is sometimes slight and of short continuance; at other times altogether incurable, and certainly mortal in a longer or shorter time; why it sometimes returns at intervals, often coming on and being increased by every kind of irritation and exercise, and sometimes relieved or totally removed by stimulants or exercise.

98
Syncope.

A syncope is when the action of the heart, and, along with it that of the arteries, is suddenly and very much lessened; whence the animal-powers, the senses, and voluntary motions, immediately cease. This may be produced by almost all the causes of palpitation; because whatever can disturb and disorder the motion of the heart, may also weaken or suspend it. The vitiated structure of the heart itself therefore, violent passions of the mind, whether of the depressing kind, or those which suddenly and vehemently excite, various kinds of nervous diseases, those of the stomach, every kind of debility and evacuation, especially a great loss of blood, excessive and unremitting labour, long watching, heat, pain, many kinds of poisons, &c. produce fainting.

Hence we see, that whatever weakens the motion of the blood through the brain tends to produce fainting; and, on the contrary, whatever tends to augment that motion, also tends to refresh, and prevent the person from fainting. Hence also we see how the mere posture of the body may either bring on or keep off fainting, or remove it after it has already come on. We likewise see how this disorder may sometimes be of little consequence and easily removed; at others very dangerous, not only as a symptom, but in even itself, as sometimes terminating in death; and lastly, how it may be used as a remedy by a skilful physician, and artificially induced, either to free the patient from violent pain, or to stop an immoderate effusion of blood scarce to be restrained by any other method.

99
Buff-coloured crust
on the
blood.

With regard to the disorders of the blood itself, Dr Gregory observes, that the glutinous part of it produces that buff-coloured appearance often seen upon blood

drawn from people afflicted with inflammatory disorders, and even sometimes when no such diseases are present. This crust indeed is nothing else than the pure gluten of the blood taking longer time than usual to coagulate, by which means the red particles have an opportunity of falling to the bottom. This indicates no lentor, density, thickness, or tenacity of the blood, as was formerly thought; but rather its thinness, or at least a less tendency in it to coagulate. It arises for the most part from a violent agitation and conuassation of the blood within the body; and hence it accompanies many fevers, all inflammations, sometimes hæmorrhages, exanthemata, plethora, pain, and many irritations. It must however be allowed, that in several of these diseases it is rendered highly probable, at least from experiments apparently accurate, that the quantity of the gluten of the blood is really increased in the proportion which it bears to the other parts. This crust, however, is not always to be accounted morbid, as it often happens to the most healthy; and may even be produced or destroyed by the slightest causes while the blood is running from the vein, so that frequently we shall see a very thick and tenacious crust on the blood flowing into one cup, while that which runs into another has little or none at all. In general, however, the appearance of this crust shows, that the patient will bear bloodletting well, though those have been in a great mistake who directed this operation to be repeated till no more crust appeared on the blood.

The glutinous part of the blood also frequently produces those masses called *polypi*, which sometimes take place during life, but more frequently after death, in the large vessels near the heart, or even in the cavities of that organ. Similar masses also are frequently formed in the uterus, and are called *moles*.

The quantity of blood contained in a healthy body is very various, and difficult to be ascertained. Many diseases, however, may arise from its being either too scanty or too abundant. Too great a quantity of blood is produced by the use of rich, nourishing diet, strong drink, accompanied with a good digestion; from a lazy, sedentary life, or much sleep, especially in those who have been formerly accustomed to much exercise; with many other causes of the same kind. It renders the person dull, weak, and languid, and sometimes almost totally oppresses him; nor are those organs destined for moving the blood sufficient for driving forward such a load. The pulse sinks; and sometimes a syncope, vertigo, or palpitation takes place. More frequently, however, the vessels are too much distended, and ready to be thrown into violent and irregular motions. Hence a disposition to fevers, inflammations, an unequal distribution of the blood, unusual congestions, rupture of the vessels, and hæmorrhages. Moreover, by reason of the close connection between the sanguiferous and the nervous system, a fulness of blood produces a disposition to spasm, and other diseases of that kind.

Hence we may understand why a plethora is sometimes accompanied with a weak and sometimes with a strong and hard pulse, why it is the cause as well as a part of so many distempers, why it is the effect of a high state of health, &c.

Disorders
of the
Blood.

100
Plethora.

Disorders
of the
Blood.101
Inanition.

The want of a due quantity of blood is no less pernicious than too great an abundance of it. It debilitates the person, and renders him unable to perform the proper offices of life; produces a languid circulation, syncope, spasms, and at last death itself. In a slighter degree of the disease the body is emaciated through want of nourishment, and its functions are vitiated in various ways. It may arise from want, bad food, or such as affords little nourishment: from bad digestion, or the chyle being hindered from passing into the blood: from fevers, or other diseases which exhaust the body and hinder nutrition: or lastly, from various evacuations, particularly of blood; and that the more especially if they are sudden, for in slow evacuations the vessels accommodate themselves surprisingly to the quantity left in them. Besides, if the body be slowly exhausted, the excretions are lessened by reason of the deficiency of the vital power; so that the unusual experience is easily compensated by the unusual retention. But if the evacuation happens to be very sudden and great, it may either prove mortal in a short time, or break the constitution to a degree beyond recovery.

102
Morbid
thinness of
the blood.

By a great and long-continued deficiency of blood the quality of it also is impaired; because the thin part of it is easily and soon made up; but the glutinous, thick, and red part, not so easily. Hence the blood becomes thin, pale, scarcely capable of coagulation, or of affording a proper support to the body. Too great thinness of the blood also proceeds from using much drink, especially of the aqueous kind, slender and little nourishing diet, a bad digestion in the stomach; from diseases of the lungs and those organs which elaborate the red part; or from suppressions of the usual evacuations of thin humours, as sweat or urine, induced by cold, a fault of the secreting organs, or by putrescency. But along with this other disorders of the blood concur.

A too thin and watery blood makes the face pale, the body weak, languid, and torpid; the solid parts become flaccid from want of nourishment, and having too great a quantity of water in their composition. It brings on hydropic effusions of water in all parts of the body, by reason of the increased exhalation of that thin fluid which moistens all the inward parts; partly by reason of the blood itself being in some measure dissolved, so that it passes out of the vessels more easily and plentifully than it ought to do; and partly by reason of the vessels being relaxed beyond their usual pitch, and not making a proper resistance. Besides, in this case, the lymphatics are so far from absorbing more than usual, that, partaking likewise of the general debility, they are scarce sufficient for performing their proper offices.

Nature, however, has taken care, by the most simple means, to provide against so many and so great evils; for neither does the blood so easily become thin as some have imagined, nor when this quality takes place does it want a proper remedy. For almost instantly, if the person be otherwise in health, the excretions of the thinner matters are greatly augmented, and the whole mass of blood in a short time becomes as thick as formerly.

[102]
Morbid
thickness of
the blood.

The opposite to this, namely, too great a thickness of the blood, though often spoken of by physicians, is

very rarely if ever observed; and those fevers and inflammations which have been thought to arise from thence, are now found to originate from other cause. The following would seem to be the law of the human constitution. As soon as the blood has attained the due degree of thickness, or gone in the least beyond it, the excretions are either suppressed or diminished, the body attracts more moisture from the air, the person is thirsty, and drinks as much as is necessary for diluting the blood. But if water be wanting, and the person cannot satisfy his thirst, then the blood is so far from being thickened, that by reason of a putrescency begun or augmented, it is much dissolved, becomes acrid, and is with difficulty contained in the vessels.

Disorders
of the
Blood.

The acrimony of the fluids has afforded a large field for declamation to the speculative physicians, and upon this slender foundation many perplexed and intricate theories have been built. It is certain indeed, that the blood in a state of health has some small share of acrimony; and this acrimony, from certain causes, may be a little increased so as to produce various diseases of a dangerous nature. This we are assured of from the increase of motion in the heart and arteries, and the similar augmentation of the action of the secretory organs, from acrid substances taken inwardly. The same thing also appears from the unusual acrimony of the secreted fluids in such cases, by which the vessels are sometimes greatly stimulated, and sometimes even quite eroded. Very many acrid substances, however, are daily taken into the stomach; so that these must either be corrected in the *prime via*, or changed by digestion before they pass into the blood; or at least by dilution with much water, or being blunted by an admixture with gluten, oil, or inflammable air, they must deposit much of their acrimony, and at last be thrown out of the body as noxious substances. Thus a vast quantity of salts, acid, alkaline, and neutral, may pass through the body, without in the least affecting the health; though these salts, if taken in very large quantity, undiluted, or not thrown out of the body, will do much hurt.

103
Acrimony
of the
blood.

Moreover, even while life continues, putrefaction is going on, and produces much of that substance called animal salt; for into this a great part of our food is converted, and passes off by the urine. But if this putrescent disposition be too great, it will produce too large a quantity of animal salt; especially if much of any saline substance is otherwise thrown into the body without proper dilution: and this kind of disease is well known to sailors who have been long at sea without having an opportunity of getting fresh provisions.

For this spontaneous putrescency, nature has suggested a proper remedy, namely, fresh meat, especially of the vegetable and acescent kind, and such as is well impregnated with aerial acid, which it may impart to the body. But where this kind of food is wanting, the putrefaction goes on apace, and a very great thinness and acrimony of the juices take place; especially if there be also a scarcity of water, or the excretions which ought to carry the putrid matters out of the body languish, either from cold, sloth, torpor, depressing passions of the mind, or from the constitution being broken by diseases; or lastly, from too great heat, which always favours putrefaction.

Be

Disorders
of the
Blood.

Besides, it would seem, that sometimes a disposition to putrefaction is much increased by the reception of a putrid ferment into the body; of which we have examples in some infectious fevers, where the contagion is very much assisted by heat, animal-diet, certain kinds of salts, debility and nastiness.

Lastly, any single part of the body may putrefy from various causes, as from inflammation, gangrene, cold, &c. and thus may the whole body be infected; although for the most part the disease proves fatal before the corruption has spread over the whole body.

But when the mass of blood begins to putrefy greatly, it not only becomes very acrid, but thin also, so that it either will not coagulate at all, or shows only a slight and very loose crassamentum. Nay, even the red globules are broke down and destroyed; in which case it necessarily follows, that the blood must become very acrid, as well on account of the evolution of the salt, as by reason of the rancid and putrid gluten, which stimulates, and frequently even erodes, the vessels; producing spots, first red, then livid and black, tumors, and ulcers scarce possible to be cured, without first removing the putrescent disposition of the humours. From the same causes proceed hæmorrhages from every part of the body, hardly to be restrained; a most intolerable fetor of the breath and all the excrements; the highest debility and laxity of the solids; the putrefaction acting as a poison to the nervous system, and at length bringing on death.

An acrimony of the acid kind never takes place in the human blood, nor in any of the humours secreted from it; though one of them, namely the milk, turns acid spontaneously in a very short time after it is drawn from the breast. Neither, indeed, does an alkaline acrimony seem ever to take place in the blood. Putrescency indeed tends this way, and at last terminates in it; but scarcely while the person lives, though the nature of the urine, even while recent, seems to be but little distant from that of an alkali.

Many kinds of acrimony indeed may exist in the blood from too liberal an use of spices, wine, &c. but of these we know nothing certain. We well know, however, that the body is often infected with various kinds of morbid acrimony, which bring on many and dangerous diseases, as the small-pox, measles, cancers, lues venerea, &c. of which the origin and manner of acting are very little understood, though the effects are abundantly evident. In most cases, nature has taken no less care to provide against the *acrimony* than against the too great *thickness* of the blood. Sometimes an antidote is afforded, either by the excitement of thirst, that the acrid substance may be diluted with plenty of drink; or by increasing the evacuations, that it may be thrown out of the body; or lastly, by exciting various motions and actions of the vital powers, by which it may be either subdued, changed, rendered innocent, or expelled from the body by new and unwonted passages.

104
Respira-
tion.

With regard to respiration, Dr Gregory observes, that it may be obstructed from various causes seated either in the lungs themselves or the surrounding parts. But from whatever cause this obstruction may arise, it undoubtedly produces all those diseases which proceed from an interrupted circulation. The lungs them-

Nº 203.

selves also being at length compressed, and not suffered to dilate sufficiently, cannot throw off the vapour which arises from them; and hence they are frequently oppressed with moisture. At the same time they are irritated, so that a greater quantity of mucus, and that of a thicker kind than usual, is secreted; by which means the passages through which the air enters them are stopped up, and a violent cough at length throws off the load.

The respiration is also subject to some other disorders, as a cough and sneezing; which, though at first sight they may seem very dangerous, are not destitute of use, and may even be reckoned among the most salutary attempts of nature to relieve the patient. Often, however, they are attended with danger, or very great uneasiness; namely, when they are either too violent or exerted in vain. At any rate, it is necessary for a physician to know the nature, causes, and effects, of these, that he may be enabled to promote them when necessary, to moderate them when too violent, and to stop them when noxious or to no purpose.

A cough is a violent, frequently involuntary, and sonorous expiration, suddenly expelling the air with great force through the glottis somewhat contracted. The convulsion of the muscles serving for expiration, gives a great force to the air, while the contraction of the glottis produces the sound. It is often long continued, being repeated at certain intervals, during each of which the inspiration is imperfect and obstructed by reason of the contraction of the glottis. It is excited by any kind of acrid substance, either chemically or mechanically applied to those passages through which the air enters. These are lined with a membrane so exceedingly delicate and impatient of stimulus, that it cannot even bear the touch of the mildest substance, such as a small drop of water, without throwing the muscles serving for expiration into a violent convulsion; the glottis at the same time contracting by means of the sympathy between it and the neighbouring parts. Thus the air is thrown out with such violence, that it drives the irritating substance along with it; and thus a cough becomes not only useful, but absolutely necessary for the preservation of life, as being able to free the lungs from every kind of irritating substance or foulness, which might soon bring on a suffocation. Hence a cough is almost an inseparable companion of every inflammation of the lungs, as well as every difficulty in respiration; and even frequently accompanies the entrance of the purest air when the trachea and bronchiæ are excoriated, or become too sensible. Examples also are not wanting, where a violent and troublesome cough has arisen from an irritation of the nervous system, or even of some particular part, of the ear, for instance, the stomach and intestines by worms, the liver by inflammation, &c.

Coughing may also be voluntarily excited, and may then be managed at pleasure. Even when involuntary, it may be moderated, or suppressed, by a contrary effort: though a violent fit of coughing cannot by any means be resisted. When it is once excited, the cough goes on till the irritating substance be expelled, or the sense of irritation abolished, or perhaps overcome by a more uneasy sensation than even the cough itself; af-

5

ter,

Disorders
of R-pira-
tion.

105
Cough.

Disorders
of Respiration.Disorders
of Digestion.

ter which, the irritation again returning at a certain interval, the cough also comes on. Hence we are taught a method of allaying and quieting this most troublesome malady, though frequently it is not in our power to remove the cause of it altogether.

A very violent cough is often dangerous. For by the retention of the breath, and the strong efforts made in coughing, a great quantity of blood is collected in the lungs, of which the vessels are distended, and frequently broken; and hence there sometimes happens a violent and even fatal hemorrhage. More frequently, however, it is the cause of a slower, though equally fatal, disease. Nay, a frequent and troublesome cough, without any great hemorrhage, or even without any hemorrhage at all, may damage the lungs to such a degree, especially if they be of a more tender structure than usual, as to lay the foundation of a phthisis almost always incurable.

Again, by a long-continued and violent cough, the passage of the blood through the lungs being impeded, it must necessarily flow through the veins towards the head: hence redness and lividness in the countenance, hemorrhages, palsies, apoplexies, and sometimes mortal convulsions. Lastly, by a violent cough the abdominal viscera are perpetually compressed with remarkable violence; and if any part happens to be weaker than usual, a hernia, prolapsus uteri, abortion, or similar accidents, may happen.

Even when the cough is more gentle, if it happens to be importunate and frequent, although we have nothing of this kind to fear, yet the patient is by no means free from danger; as he is thereby agitated, fatigued, has his constitution broken, is deprived of rest, has a fever brought upon him, his lungs are shaken and irritated, digestion and all the other functions are impeded, till at last he sinks under a complication of maladies.

106
Sneezing.

Sneezing is somewhat akin to cough, as consisting of a very full inspiration, to which succeeds a most violent expiration, by which the air is driven out through the nostrils with immense violence, and sweeps the passage through them as it goes out. It is a convulsion much more violent than a cough, and is besides very difficult to be stopped when once a propensity to it has taken place. As a cough proceeds from an irritation of the glottis, trachea, bronchia, and lungs, so sneezing arises from an irritation of the membrane of the nostrils, but rarely from sympathy with any distant part. It is sometimes of service, as well as a cough; though it is also sometimes prejudicial, for the reasons which have been already assigned.

107
Digestion.

The last part of Dr Gregory's treatise necessary to be taken notice of here, is that which considers diseases arising from a bad digestion, disordered motion of the intestines, and some of the principal secretions. The first of these, he says, are sometimes very troublesome, though seldom dangerous. The principal symptoms are oppression, anxiety, pain at the stomach; eructations, by reason of air extricated from the fermenting aliments, and irritating the stomach; nausea and vomiting, from the irritation and distension of the same organ; the belly sometimes too costive, and sometimes too loose; a defect of nourishment; a general debility; relaxation of the solid parts; too great thin-

VOL. XI. Part I.

ness of the fluids; all the functions impeded; pain of the head; vertigo, syncope, asthma, palpitation; great sinking of the spirits, especially if the patient has been of a peculiar constitution; sometimes the gout, sometimes a dropsy, or a slow fever which may prove mortal.

The motion of the intestines may be either too great or too little; and hence proceeds either costiveness or looseness. The former is frequently not to be accounted morbid; but, when it is, it may arise from the structure of the intestines being injured, or from their being shut up or obstructed by spasm or otherwise, or from a deficiency of those humours which moisten the intestines; or it may arise from mere debility, from a palsy of the fibres perhaps, or from a deficiency of the usual stimulus, of the bile, for instance, or from too dry or slender a diet.

The consequences of long-continued costiveness, are first an affection of the alimentary canal, and then of the whole body. The stomach is diseased, and does not digest the aliments properly; the whole body is left destitute of its usual stimulus; the blood is corrupted, perhaps from the resorption of the putrid matter into it. The circulation through the abdominal viscera is impeded; hence frequent and irregular congestions, varices of the veins, hemorrhoids, &c. Nay, the intestines themselves being overloaded, distended and irritated by an heavy, acrid, and putrid load of aliment or other matters, are excited to new and unusual contractions, which, if they do not get the better of the obstruction, bring on tormina, colic, or an iliac passion, inflammation and gangrene, fatal in a very short time.

Looseness, or diarrhoea, is a malady extremely common; being sometimes a primary disease, and sometimes only a symptom or an effect of others. Sometimes it is a salutary effort of nature, such as the physician ought to imitate and bring on by art. It is also familiar to infants, and to people of a certain constitution; and to them costiveness is very prejudicial. It may arise, in the first place, from something taken into the body, or generated in the intestines; from a fermentation and corruption of the mass of aliments; from the bile being too abundant and acrid, or from blood or pus poured into the intestines; from the intestines themselves being eroded, or deprived of their natural mucus; from the humours being driven from the surface of the body towards the inward parts, as by cold, especially when applied to the feet; or from a general corruption of the whole body, as in the phthisis, hectic, or putrid fever, especially towards the end of these disorders. In fevers it is sometimes salutary, or even puts an end to the disease altogether, or at least renders it milder: more frequently, however, deriving its origin from putrescency, it is of no service, but rather exhausts the strength of the patient. A diarrhoea likewise, almost incurable, and often mortal in a short time, frequently arises after the operation for the fistula in ano. Some have their intestines so extremely weak and moveable, that from the slightest cause, such as catching cold, any violent commotion of the mind, &c. they are subject to a violent diarrhoea. Lastly, whatever be its origin, if it hath continued for a long time, the viscera are rendered so weak and irritable,

108
Costiveness.109
Looseness.

M

ritable,

Disorders of
the Alimen-
tary Canal.

ritable, that the disease, though often removed, still returns from the slightest causes, and even such as are not easily discovered.

A diarrhoea proves very pernicious, by hindering digestion and the nourishment of the body; for the stomach is commonly affected, and the aliments pass through the intestines so quickly, that they can neither be properly digested, nor are the lacteals able to absorb the chyle from them as they go along. Such a violent evacuation is also hurtful by exhausting the body, and carrying off a great quantity of the nutritious matter from the blood. Neither, indeed, is it only the alimentary mass which is thrown out sooner than it ought to be; but at the same time, a great quantity of the fluids secreted in the intestines, so that the whole body quickly partakes of the debility.

Sometimes a violent and long-continued diarrhoea rises to such a height, that the aliment is discharged with little or no alteration. Sometimes also, though rarely, from a similar cause, or from the obstruction of the mesenteric glands, and its other passages into the blood, the chyle itself is thrown out like milk along with the excrements; and this disease is called the *fluxus caliacus*.

110
Dysentery.

A dysentery is attended with very severe gripes in the belly, a frequent desire of going to stool, and vain efforts which excrete nothing besides the mucus of the intestines mixed with a little blood; and is accompanied with excessive debility, and frequently with putrescency and fever. It is thought to arise from the constriction of some part of the intestines, of the colon especially: by which means the bowels, though ever so much irritated, can pass nothing; neither can the disease be removed until the belly has been well purged by proper medicines.

111
Tenesmus.

A tenesmus is a frequent and insatiable propensity to stool, without being able to pass any thing, notwithstanding the most violent efforts. It may be occasioned by any kind of irritation, either of the rectum itself or of the neighbouring parts, by acrid substances taken into the body; by some of the stronger purges, especially aloes, which is very difficult of solution, and will pass even to the rectum with very little alteration; by a violent and obstinate diarrhoea, dysentery, hæmorrhoids, worms, fistula, calculus, ulcer in the bladder, urethra, &c. It is often very pernicious, both from the excessive uneasiness it occasions to the patient, and from its exhausting his strength, by the frequent and vain efforts bringing on a prolapsus ani, and communicating the violent irritation to the neighbouring parts, as the bladder, &c.

112
Nausea and vomiting.

A nausea and vomiting are disorders very common, and owing to almost innumerable causes; not only to affections of the stomach itself, but also to affections and irritations of the remotest parts of the body which may act upon the stomach by sympathy. Every irritation and distention of that viscus therefore, a load of crude aliment, an obstruction about the pylorus, all acrid substances taken into it, diseases of the liver, intestines, kidneys, uterus, the head, the feet, the skin, or indeed the whole body, inflammation, the stone, king's evil, scirrhus, apoplexy, compression of the brain, fracture of the skull, vertigo, syncope, violent pain, the gout, especially when repelled, fevers, pas-

sions of the mind, disagreeable imaginations or dis- Disorders of
courses, frequently induce nausea and vomiting. the Alimen-
tary Canal.

These affections are often serviceable by freeing the stomach from something with which it was overloaded; promoting spitting in some cases where the lungs are overcharged with mucus, blood, pus, or water; producing sweat, and a free and proper distribution of blood to the surface of the body; partly, perhaps, by the great straining which accompanies vomiting, but rather by that wonderful sympathy which takes place between the stomach and skin: and hence, in many diseases, vomiting is a most excellent remedy. It is however in some cases hurtful, if too violent or too frequently repeated, partly by debilitating and making the stomach more easily moved; and partly by fatiguing the patient with violent strainings, which occasion hernias, abortions, &c.

Sometimes we find the motion of the intestines totally inverted, from the anus to the mouth; a most dangerous distemper, which hath obtained the name of the *iliac passion*. It most frequently arises from some obstruction in the alimentary canal hindering the descent of the excrements, as scirrhus, spasm, inflammation, &c.: though the most perfect iliac passion takes place without any obstruction, so that clysters will be vomited; and even after this has continued for several days, the patients have at length recovered.

A slighter degree of the iliac passion, namely the inversion of the peristaltic motion of the duodenum, always takes place in long continued and violent vomiting, as in sea-sickness, or when a person has taken too large a dose of an emetic; by which means a vast quantity of bile frequently ascends into the stomach, and is discharged by vomiting.

An excessive vomiting with looseness is called a *cholera*, when the matter discharged has a bilious appearance. It arises from a very great irritation of the alimentary canal without any obstruction; and is for the most part occasioned by too great a quantity, or from an acrimony of the bile, from whence it takes its name. It may originate from several causes, as too strong a dose of an emetic and cathartic medicine, eating too great a quantity of summer-fruits, &c. and is a very violent malady, often killing the patient in a few hours, unless proper remedies be applied in time.

From a suppression of any of the secretions, or a disorder of any of the secretory organs, many mischief may arise. A diminution of perspiration produces plethora, lassitude, languor, depression of mind, bad digestion, loss of appetite, and even a general corruption of the humours from the retention of such a quantity of putrescent matter.—The more suddenly the diminution or suppression of the perspiration takes place, the sooner the mischief is produced, and the greater it is; not only by retaining the matter which ought to be thrown out, but by repelling the humours from the surface of the body, and directing them to other parts; whence fevers, inflammations, congestions of the blood, &c. frequently take place.

Thus suppression of perspiration may arise from many different causes; as from cold suddenly applied to the body when very hot; sometimes from very violent

113
Iliac passion.

114
Cholera.

115
Obstructed perspiration.

passions

Disorders of Secretion. 116
 Excessive perspiration. Disorders of Secretion. 116
 passions of the mind; or from spasmodic diseases, as the hysterics, &c. It may be suppressed also by that kind of constriction of the vessels of the skin which is produced by various kinds of fevers, the nature of which has hitherto been but little known.

116
 Excessive perspiration. Disorders of Secretion. 116
 Excessive perspiration or sweating is injurious by debilitating the body, relaxing the skin, and exposing the patient to all the evils which arise from catching cold. It may even be carried to such a height as to produce fainting and death; though it must be owned that we cannot easily bring examples of people having from this cause their blood inspissated, corrupted, or being thence made liable to inflammations and fevers.

117
 Suppression of urine. Disorders of Secretion. 117
 A suppression of urine is still more dangerous than that of perspiration, and unless relieved in a short time will certainly prove fatal. This disorder, which is called *ischuria*, may arise from various diseases of the kidneys, ureters, bladder, urethra, &c. Thus any obstruction or irritation of one or other of the kidneys or ureters, by a stone, gravel, mucus, blood, inflammations, spasm, suppuration, scirrhus, swellings of the neighbouring parts, &c. may either prevent the urine from being secreted, or may give rise to a scanty or depraved secretion, or finally may obstruct its passage into the bladder after it is secreted.

The urine also, after it has entered the bladder, is there frequently suppressed, by reason of various disorders to which that organ is liable, as an irritation or inflammation, spasm, acrid substances injected, or sympathy with the neighbouring parts; or by reason of the texture of the bladder itself being destroyed, or from a palsy, scirrhus, ulcer, &c. in the bladder. Or, lastly, the urine may be retained in the bladder from a general stupor, as from a disease of the brain, which happens in some fevers, when the patient is neither sensible of the usual stimulus, nor even of one much greater, so that the fibres can scarcely be excited to contraction by any means whatever. This, in fevers, is always a bad sign, and sometimes even proves fatal.

A suppression of urine for any length of time produces an immense distension of the bladder, oppression, uneasiness, and pain, not only of the part itself, but of the surrounding ones, and even of the whole body; a spasm, or insuperable constriction of the sphincter; an inflammation, gangrene, or laceration of the bladder itself; a violent irritation of the whole habit; then a nausea, vomiting, vertigo, general stupor, and an impregnation of the whole mass of blood with a humour of an urinous nature, which at last being poured out into various cavities of the body, especially of the head, soon brings on a deep sleep, convulsions, and death.

118
 Dysuria. Disorders of Secretion. 118
 From the same causes, but acting with less force, proceeds that disease called a *dysuria*, when the urine passes with difficulty and pain, and is frequently red, black, bloody, purulent, mucous and sandy; the reason of all which appearances is very much unknown.—The most frequent complaint, however, in making water, is where the patient has a continual and violent desire of passing his urine, while at the same time only two or three drops can be passed at once, and that not without some pain. This is occasioned, even in healthy people, by some acrid substance taken into the stomach; and is very common to old people,

Disorders of Secretion. 119
 who are generally subject to disorders of the kidneys and bladder. It arises also frequently from a stone irritating the bladder, or from an inflammation of it, or its being deprived of its mucus, or this last being somehow or other corrupted; or lastly, from certain diseases or some particular state of the neighbouring parts, as of the uterus, vagina, urethra, prostate gland, &c.

120
 Incontinence of urine. Disorders of Secretion. 120
 Akin to the stranguy is an incontinence of urine, when the patient's water either comes away against his will, or altogether without his knowledge. This disorder may arise from debility, palsy, an ulcer or wound, or any long-continued and violent irritation of the bladder, especially of its sphincter, as from a stone, a general palsy, or in females, difficult labour injuring the neighbouring parts.—This symptom occurs in a great number of diseases, especially in the hydrocephalus.—Sometimes the urine is expelled with violence, either by reason of universal spasms, or by violent contractions of the muscles of respiration, as in sneezing, laughter, &c.

121
 Urinary calculi. Disorders of Secretion. 121
 Among the disorders incident to the urine we may reckon the production of calculi, which frequently bring on the most excruciating and dangerous diseases.—The urine, besides the water and salts, contains no small share of the glutinous part of the blood already somewhat corrupted, and still inclined to farther corruption. Hence the urine even of the most healthy people deposits a sediment after it has stood for some time; and though none of this sediment be formed in an healthy body, yet if the smallest particle of foreign matter be introduced into the bladder, a crust soon gathers round it, and it is sure to become the basis of a stone, which by degrees grows to a very great size. It is not unlikely, also, that some unknown fault of the fluids may contribute to the production of those calculi, as the stone is well known to be an hereditary disease, and to be born with the patient. Calculous persons also are commonly subject to complaints of the stomach, especially to an acidity of it; and many have received no little relief from alkalescent or alkaline medicines.—From the same causes may calculi be formed in the kidneys; from which proceed a horrid train of symptoms described in the subsequent part of this treatise.

It is now found by accurate experiments of the most able chemists, that urinary calculi do not, as was once supposed, consist almost entirely of an earthy matter. Their principal constituent is a peculiar acid approaching more nearly to the phosphoric found in the bones than to any other. But the acid of calculus being in some respects peculiar in its nature, has among modern chemists obtained a peculiar name, and been distinguished by the appellation of the *lithic acid*. It is highly probable that this acid present in the circulating mass, is precipitated and disengaged by the introduction of other acids, and thus thrown off in greater quantities by the kidneys. Thus then we can understand the influence of acids as tending to the generation of calculus, and of alkalies as tending to prevent it.

122
 Scirrhus. Disorders of Secretion. 122
 The last disorder here to be taken notice of is a scirrhus, disorder of the glands themselves, owing to some kind of obstruction, and is one of the most dreadful diseases incident to human nature. Hence happens a

Scurrh.

great swelling and surprising hardness, not only without pain, but sometimes even with a diminution of sensation in the part affected; and when the gland is thus affected, it is called a *scurrhus*. Sometimes it remains in this state for a long time; but sooner or later produces the most excruciating torment. By degrees it is infected with a slow and malignant suppuration, degenerating into an horrid ulcer, consuming not only the part itself, but eating away the neighbouring ones, and corrupting the whole body with the most acrid and incurable poison. This disease is called a *cancer*, of which the causes are very little known.

Of the organs in both sexes concerned in the function of generation, and of that function as far as we yet know any thing respecting it, an account has already been given in ANATOMY; and after what has already been said of the different functions, and of the morbid affections, to which these are subjected, we may conclude our remarks on the theory of medicine, with mentioning the remarkable versatility of the human constitution; which, more than that of any other animal, is capable of accommodating itself to every climate and to all kind of diet. Hence we may conclude, that a large proportion of the diseases to which we are subjected are produced by ourselves.

Versatility
of the Hu-
man Con-
stitution.

PRACTICE OF MEDICINE, or an Account of the principal Diseases to which the Human Body is subjected.

123
General
Arrangement
of
Diseases.

WE have already defined medicine to be the art of preventing, curing, and alleviating, these diseases to which mankind are subjected. While these affections, however, are in number almost infinite, each in its progress is subjected to almost endless varieties from differences in climate, constitution, treatment, and a variety of other particulars. Hence we may readily explain both the difficulty of distinguishing morbid affections from each other in actual practice, and the diversity of names which have been affixed to them in the writings of ancient physicians. It may readily be supposed, that in this as well as other subjects, there has been a gradual improvement from the progressive labours of industrious and ingenious men. And although much yet remains to be done in the proper arrangement and distinction of diseases, or what has been called *methodical nosology*, yet there cannot be a doubt, that during the course of the present century, this subject has received very great improvements. For these, we are in the first place highly indebted to the labours of Franciscus Boissier de Sauvages, an eminent professor of medicine at Montpellier, who, following out an idea suggested by the sagacious Dr Sydenham of England, first successfully attempted to arrange diseases as botanists had done plants, into classes, orders, genera, and species. Since the publication of the *Nosologia Methodica* of Sauvages, this subject has been successfully cultivated by several ingenious men, particularly by Sir Charles Linnæus of Upsal, to whose genius for arrangement every branch of natural history, but botany in particular, has been so highly indebted; by Rudolphus Augustus Vogel, an eminent professor at Gottingen; and by John Baptist Sagar, a distinguished physician at Ig-law in Moravia: But of all the systems of arrangement yet presented to the medical world, that published by the late illustrious Dr William Cullen of Edinburgh, may justly be considered as the best. In treating, therefore, of the principal diseases to which the human body is subjected, we shall follow his plan, endeavouring to deliver the best established observations respecting the history, theory, and practice of each. And in treating of particular genera of disease, although we follow the arrangement of Dr Cullen, yet for the satisfaction of the reader, we shall point out the classes to which the same affection is referred

by the other eminent writers whom we have mentioned. And on this account, it may not be improper briefly to enumerate the general classes to which each of them have referred the affections of the human body.

The classes of Sauvages are,

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| 1. Vitia. | 6. Debilitates. |
| 2. Febres. | 7. Dolores. |
| 3. Phlegmasiæ. | 8. Vefaniæ. |
| 4. Spasmi. | 9. Fluxus. |
| 5. Anhelationes. | 10. Cachexiæ. |

The classes of Linnæus are,

- | | |
|-------------------|------------------|
| 1. Exanthematici. | 7. Motorii. |
| 2. Critici. | 8. Suppressorii. |
| 3. Phlogistici. | 9. Evacuatorii. |
| 4. Dolorosi. | 10. Deformes. |
| 5. Mentales. | 11. Vitia. |
| 6. Quietales. | |

The classes of Vogel are,

- | | |
|----------------|-------------------|
| 1. Febres. | 7. Hyperæstheses. |
| 2. Profluvia. | 8. Cachexiæ. |
| 3. Epischeses. | 9. Paranoiæ. |
| 4. Dolores. | 10. Vitia. |
| 5. Spasmi. | 11. Deformatates. |
| 6. Adynamix. | |

The classes of Sagar are,

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|-------------------|------------------|
| 1. Vitia. | 8. Anhelationes. |
| 2. Palgæ. | 9. Debilitates. |
| 3. Cachexiæ. | 10. Exanthemata. |
| 4. Dolores. | 11. Phlegmasiæ. |
| 5. Fluxus. | 12. Febres. |
| 6. Suppressiones. | 13. Vefaniæ. |
| 7. Spasmi. | |

After this short view of different classifications, we shall next present to our readers a more particular account of the arrangement of Dr Cullen; which, although it can by no means be represented as free from errors or imperfections, is yet in many respects the best that has hitherto been published.

CULLEN'S Arrangement.

CLASS I. PYREXIÆ. A frequent pulse coming on after an horror; considerable heat; many of the functions

tions injured; the strength of the limbs especially diminished.

ORDER I. Febres. Pyrexia without any primary local affection, following langour, lassitude, and other symptoms of debility.

Sect. I. *Intermittentes*. Fevers arising from the miasma of marshes; with an apyrexia, or at least a very evident remission; but the disease returns constantly, and for the most part with a horror or trembling. There is only one paroxysm in a day.

Genus I. *Tertiana*. Similar paroxysms at an interval of about 48 hours, coming on most commonly at mid-day. A tertian hath either;

I. An apyrexia interposed;

1. Varying the duration of the paroxysms.

A. The tertian whose paroxysms are not extended beyond 12 hours.

B. The tertian with paroxysms extended beyond 12 hours.

2. Varying in the return of the paroxysms.

C. The tertian returning every day with unequal paroxysms alternately similar to one another.

D. The tertian returning every third day with two paroxysms on the same day.

E. The tertian returning every day, with two paroxysms on every third day, and only one on the intermediate ones.

F. The tertian returning every day, with a notable remission interposed between the odd and the even days, but a less remarkable one between the even and the odd one.

3. Varying in its symptoms.

G. The tertian accompanied with a disposition to sleep.

H. Accompanied with spasms and convulsive motions.

1. Accompanied with an efflorescence on the skin.

K. With phlegmasia.

4. Varying in being complicated with other diseases.

5. Varying as to its origin.

II. With the interposition only of a remission between the paroxysms.

Genus II. *Quartana*. Similar paroxysms, with an interval of about 72 hours, coming on in the afternoon.

I. With the interposition of an apyrexia.

1. Varying in the type.

A. The quartan with single paroxysms, returning every fourth day, none on the other days.

B. With two paroxysms every fourth day, and none on the other days.

C. With three paroxysms every fourth day, and none on the intermediate days.

D. Of the four days having only the third free from fever, with similar paroxysms every fourth day.

E. The quartan coming on every day, with similar paroxysms every fourth day.

2. Varying in its symptoms.

3. Varying in being complicated with other diseases.

II. With a remission only between the paroxysms.

Genus III. *Quotidiana*. Similar paroxysms with an interval of about 24 hours, coming on in the morning.

I. With the interposition of an apyrexia.

1. Varies in being solitary.

A. Universal.

B. Partial.

2. Complicated with other diseases.

II. With a remission only between the paroxysms.

Sect. II. *Continua*. Fevers without any intermission, and not occasioned by marsh miasmata; attended with exacerbations and remissions, though not very remarkable.

Genus IV. *Synocha*. Great heat; a frequent, strong, and hard pulse; high-coloured urine; the functions of the sensorium a little disturbed.

Genus V. *Typhus*. A contagious disease; the heat not greatly above the natural; the pulse small, weak, and for the most part frequent; the urine little changed; the functions of the sensorium very much disturbed, and the strength greatly diminished.

The species are,

I. *Typhus petechialis*. Typhus for the most part with petechiæ.

Varying in degree. 1. Mild typhus. 2. Malignant typhus.

II. *Typhus icterodes*. Typhus with a yellowness of the skin.

Genus VI. *Synochus*. A contagious disease. A fever composed of a synocha and typhus; in the beginning a synocha, but towards the end a typhus.

ORDER II. *Phlegmasiæ*. A synocha fever, with inflammation or topical pain, the internal function of the part being at the same time injured; the blood covered with size.

Genus VII. *Phlogosis*. Pyrexia; redness, heat, and painful tension, of some external part.

The species are,

I. *Phlogosis (phlegmone)* of a vivid red colour; a swelling well defined, for the most part elevated to a point, and frequently degenerating into an abscess, with a beating or throbbing pain.

The variations are, 1. In the form. 2. In the situation.

II. *Phlogosis (erythema)* of a reddish colour, vanishing by pressure; of an unequal and creeping circumference, with scarce any swelling; ending in the scaling off the cuticle, in phlyctenæ, or blisters.

The variations are, 1. In the degree of violence. 2. In the remote cause. 3. In being complicated with other diseases.

The consequences of a phlogosis are, an imposthume, gangrene, sphacelus.

Genus VIII. *Ophthalmia*. A redness and pain of the eye, with an inability to bear the light; for the most part with an effusion of tears.

The species and varieties of the ophthalmia are,

I. Idiopathic.

1. *Ophthalmia (membranarum)*, in the tunica adnata, and the membranes lying under it, or the coats of the eye.

A. Varying in the degree of the external inflammation.

B. In the internal coats affected.

2. *Ophthalmia (tarfi)* of the eye-lids, with swelling, erosion, and glutinous exudation.

II Symptomatic.

1. From a disease of the eye itself.

2. From

2. From diseases of other parts, or of the whole body.

Genus IX. Phrenitis. Violent pyrexia; pain of the head; redness of the face and eyes; inability to endure the light or any noise; watchfulness; a fierce delirium, or typhomania.

I. Idiopathic.

II. Symptomatic.

Genus X. Cynanche. Pyrexia sometimes inclining to a typhus; difficulty of swallowing and breathing; with a sensation of narrowness in the fauces.

The species are,

I. Cynanche (*tonsillaris*) affecting the mucous membrane of the fauces, but especially the tonsils, with redness and swelling, accompanied with a synocha.

II. Cynanche (*maligna*) affecting the tonsils and mucous membrane of the fauces with swelling, redness, and mucous crusts of a whitish or ash-colour, creeping, and covering ulcers; with a typhous fever and exanthemata.

III. Cynanche (*trachealis*) attended with difficult respiration, noisy and hoarse inspiration, loud cough, without any apparent tumor in the fauces, somewhat difficult deglutition, and a synocha.

IV. Cynanche (*pharyngea*) attended with redness in the bottom of the fauces, very difficult and painful deglutition, respiration sufficiently free, and a synocha.

V. Cynanche (*parotidea*) with great swelling of the parotids and maxillary glands appearing on the outside: the respiration and deglutition but little injured; a synocha, for the most part mild.

Diseases of this genus are symptomatic, either from external or internal causes.

Genus XI. Pneumonia. Pyrexia, with a pain in some part of the thorax, difficult respiration, and cough. The species are.

I. Peripneumony, with a pulse not always hard, but sometimes soft; an obtuse pain of the breast; the respiration always difficult; sometimes the patient cannot breathe unless in an upright posture; the face swelled, and of a livid colour; the cough for the most part moist, frequently bloody.

1. Simple idiopathic peripneumonies.

Varying in degree.

2. Idiopathic peripneumonies complicated with fever.

3. Symptomatic peripneumonies.

II. Pleurisy, with a hard pulse; for the most part attended with a pungent pain of one side, augmented chiefly during the time of inspiration; an uneasiness when lying on the side; a most painful cough, dry in the beginning of the disease, afterwards moist, and frequently bloody.

1. Simple idiopathic pleurifies.

2. Pleurifies, complicated (1.) With fever. (2.) With catarrh.

3. Symptomatic pleurifies.

4. False pleurifies.

The consequences of pleurisy are a vomica or empyema.

Genus XIII. Carditis. Pyrexia; pain about the heart; anxiety; difficulty of breathing; cough; unequal pulse; palpitation of the heart, and fainting.

I. Idiopathic.

II. Symptomatic.

Genus XIV. Peritonitis. Pyrexia; pain of the belly, exasperated by an upright posture, without the proper signs of other abdominal phlegmasiæ. If the diagnostics of the following diseases are given, they may be reckoned as so many species of this genus.

I. Peritonitis (*propria*) situated in the peritonæum, properly so called, surrounding the inside of the abdomen.

II. Peritonitis (*omentalis*) in the peritonæum extended through the omentum.

III. Peritonitis (*mesenterica*) in the peritonæum spread through the mesentery.

Genus XV. Gastritis. Pyrexia inclining to a typhus; anxiety; pain and heat of the epigastrium, augmented when any thing is taken into the stomach; an inclination to vomit, and an immediate rejection of every thing swallowed; an hiccup.

I. Idiopathic.

1. From internal causes.

A. Gastritis (*phlegmonodea*) attended with acute pain and violent pyrexia.

2. From external causes.

B. Gastritis (*erysipelatoza*), with a less violent fever and pain; an erysipelatous redness appearing on the fauces.

II. Symptomatic.

Genus XVI. Enteritis. Pyrexia of a typhous nature; pungent pain of the belly, stretching and twisting round the navel; vomiting; the belly obstinately bound.

I. Idiopathic.

1. Enteritis (*phlegmonodea*), with acute pain, violent fever, vomiting, and constipation of the belly.

2. Enteritis (*erysipelatoza*) with less acute fever and pain, without vomiting; but accompanied with a diarrhœa.

II. Symptomatic.

Genus XVII. Hepatitis. Pyrexia; tension and pain of the right hypochondrium; sometimes pungent like that of a pleurisy, but more frequently obtuse; a pain reaching to the clavicle and top of the right shoulder; a difficulty of lying on the left side; dyspnœa; dry cough, vomiting, and hiccup.

Genus XVIII. Splenitis. Pyrexia; tension, heat, and swelling of the left hypochondrium, the pain increasing by pressure; without the signs of nephritis.

Genus XIX. Nephritis. Pyrexia; pain in the region of the kidney, often following the course of the ureter; frequent making of water, either thin and colourless, or very red; vomiting; stupor of the thigh; with a retraction or pain of the testicle of the same side. The species are,

I. Idiopathic. Spontaneous.

II. Symptomatic.

Genus XX. Cystitis. Pyrexia; pain and swelling of the hypogastrium; frequent and painful making of water, or ischuria; and tenesmus. The species are,

I. Those arising from internal causes.

II. Those from external causes.

Genus XXI. Hysteritis. Pyrexia; heat, tension, swelling,

swelling, and pain of the hypogastrium; the os uteri painful when touched; vomiting.

Genus XXII. Rheumatismus. A disease arising from an external and frequently very evident cause; pyrexia; pain about the joints, frequently pursuing the course of the muscles; infesting the knees and other large joints rather than those of the feet or hands; increased by external heat.

The species are either idiopathic or symptomatic. The former varies in situation.

- A. In the muscles of the loins.
- B. In the muscles of the coxendix.
- C. In the muscles of the breast.

Genus XXIII. Odontalgia; a rheumatism of the jaws from a caries of the teeth.

Genus XXIV. Podagra. An hereditary disease, arising without any evident external cause, but for the most part preceded by an unusual affection of the stomach; pyrexia; pain of a joint for the most part of the great toe of the foot, at least infesting chiefly the wrists and ankles; returning by intervals; and often alternated with affections of the stomach and other internal parts.

I. Podagra (*regularis*) with a pretty violent inflammation of the joints remaining for some days, and by degrees going off with swelling, itching, and desquamation of the affected part.

II. Podagra (*atonica*) with an atony of the stomach, or some other internal part; and either without the usual inflammation of the joints, or only with slight and wandering pains; and frequently alternated with dyspepsia, or other symptoms of atony.

III. Podagra (*retrograda*) with the inflammation of the joints suddenly receding, and an atony of the stomach and other parts immediately following.

IV. Podagra (*aberrans*) with the inflammation of an internal part either preceding or not, and suddenly receding; with an inflammation of the joints.

Genus XXV. Arthropuosis. Deep, obtuse, and long-continued pains of the joints or muscular parts, frequently following contusions; with either no swelling, or a moderate and diffused one; no phlogosis; pyrexia, at first gentle, afterwards hectic, and at length an imposthume.

ORDER III. Exanthemata. Contagious diseases; affecting a person only once in their life; beginning with fever; after a certain time appear phlogoses, for the most part small and in considerable number, and dispersed over the skin.

Genus XXVI. Erysipelas. A synocha of two or three days, for the most part attended with drowsiness, often with a delirium. In some part of the skin, most frequently the face, appears a phlogosis *erithema*. (G. VII. Sp. 2.) The species are,

I. Erysipelas (*vesiculosum*) with erythema, redness creeping, occupying a large space, and in some parts ending in large blisters.

II. Erysipelas (*phlyctenodes*), with an erythema formed of a number of papulæ, chiefly occupying the trunk of the body, ending in phlyctenæ or small blisters.

The disease is also symptomatic.

Genus XXVII. Pestis. An exceedingly contagious typhus, with the highest debility. On an uncertain

day of the disease buboes and carbuncles break forth. It is various in degree, but the species are uncertain.

Genus XXVIII. Variola; a contagious synocha, with vomiting, and pain on pressing the epigastrium. On the third day begins, and on the fifth is finished, the eruption of inflammatory pustules, which suppurate in the space of eight days, and at last go off in crusts; frequently leaving depressed cicatrices or pock-pits in the skin. The species are,

I. Variola (*discreta*) with few, distinct, turgid pustules, having circular bases; the fever ceasing immediately after the eruption.

II. Variola (*confluens*) with numerous, confluent, irregularly shaped pustules, flaccid, and little elevated; the fever remaining after the eruption.

Genus XXIX. Varicella. Synocha; papulæ breaking out after a short fever, similar to those of the small-pox, but hardly ever coming to suppuration; after a few days going off in small scales, but never leaving any mark.

Genus XXX. Rubeola. A contagious synocha, with sneezing, epiphora, and dry hoarse cough. On the fourth day, or a little later, break forth small, clustered, and scarce elevated papulæ; after three days going off in very small branny scales.

I. Rubeola (*vulgaris*) with very small confluent, corymbose papulæ, scarce rising above the skin.

Varying,

1. In the symptoms being more severe, and the course of the disease less regular.

2. In being accompanied with a quinsey.

3. With a putrid diathesis.

II. Rubeola (*variolodes*) with distinct papulæ, raised above the skin.

Genus XXXI. Miliaria. Synochus with anxiety, frequent sighing, foetid sweat, and points on the skin. On an uncertain day of the disease, break out red, small, distinct papulæ, spread over the whole body as well as the face; the apices of which, after one or two days, become very small white pustules, remaining for a short time.

Genus XXXII. Scarlatina. A contagious synocha. On the fourth day of the disease the face swells a little; at the same time an universal redness occupies the skin in large spots, at length running together; after three days going off in branny scales; frequently succeeded by an anasarca. The species are,

I. Scarlatina (*simplex*), not accompanied with cyananche.

II. Scarlatina (*cynanchica*), with an ulcerous cyananche.

Genus XXXIII. Urticaria. An amphemerina fever. On the second day of the disease, red spots resembling the stinging of nettles, almost vanishing during the day, but returning in the evening with the fever, and after a few days going off altogether in very small scales.

Genus XXXIV. Pemphigus. A contagious typhus. On the first, second, or third day of the disease, blisters break out in several parts of the body, of the bigness of a bean, remaining for many days, and at last pouring out a thin ichor.

Genus XXXV. Aphtha. Synochus; the tongue somewhat swelled and of a livid colour, as well as the fauces; eschars first appearing in the fauces, but at length

General
Arrangement of
Diseases.

length occupying the whole internal part of the mouth, of a white colour, sometimes distinct, often running together; quickly growing again when taken off; and remaining for an uncertain time.

The species are, 1. Idiopathic. 2. Symptomatic.

ORDER IV. Hæmorrhagiæ. Pyrexia, with a profusion of blood, without any external violence: the blood drawn from a vein hath the same appearance as in phlegmasiæ.

Genus XXXVI. Epistaxis. Pain or weight of the head, redness of the face; a profusion of blood from the nose.

I. Idiopathic.

Varying according to the time of life.

1. Epistaxis of young people, with symptoms of an arterious plethora.

2. Epistaxis of old people, with symptoms of a venous plethora.

II. Symptomatic.

1. From internal causes.

2. From external causes.

Genus XXXVII. Hæmoptysis. Redness of the cheeks; a sensation of uneasiness, or pain, and sometimes of heat in the breast; difficulty of breathing; tickling of the fauces; either a severe or less violent cough, bringing up florid and frequently frothy blood.

The idiopathic species are,

1. Hæmoptysis (*plethorica*), without any external violence, and without being preceded by any cough or suppression of any customary evacuation.

2. Hæmoptysis (*violenta*), from external violence applied.

3. Hæmoptysis (*phthifica*), after a long-continued cough, with a leanness and debility.

4. Hæmoptysis (*calculosa*), in which some calculous molecules, for the most part of a calcareous nature, are thrown up.

5. Hæmoptysis (*vicaria*), after the suppression of a customary evacuation.

Besides these, there are a number of symptomatic species mentioned by different authors. The consequence of an hæmoptysis is, a

Phthisis. A wasting and debility of the body, with a cough, hectic fever, and for the most part a purulent expectoration. The species are,

I. An incipient phthisis, without any expectoration of pus.

II. A confirmed phthisis, with an expectoration of pus.

Both species vary, 1. As to their remote cause. 2. As to the origin of the purulent matter.

Genus XXXVIII. Hæmorrhoids. Weight and pain of the head; vertigo; pain of the loins; pain of the anus; livid painful tubercles, from which for the most part blood flows out; which sometimes also drops out of the anus, without any apparent tumor. The species are,

1. Hæmorrhoids (*tumens*), external from mariscæ.

Varying.

A. Bloody.

B. Mucous.

2. Hæmorrhoids (*procidens*), external from a *procidencia ani*.

Nº 203.

3. Hæmorrhoids (*fluens*), internal, without any swelling, or *procidencia ani*.

4. Hæmorrhoids (*caca*), with pain and swelling of the anus, without any profusion of blood.

Genus XXXIX. Menorrhagia. Pains of the back, belly, and loins, like those of child-birth; an unusually copious flux of the menses or blood from the vagina. The species are,

1. Menorrhagia (*rubra*), bloody in women neither with child nor in child-birth.

2. Menorrhagia (*abortus*), bloody in women with child.

3. Menorrhagia (*lochialis*), bloody in women after delivery.

4. Menorrhagia (*vitiorum*) bloody from some local disease.

5. Menorrhagia (*alba*), ferous, without any local disease, in women not with child.

6. Menorrhagia (*Nabothi*), ferous in women with child.

ORDER V. Profluvia. Pyrexia, with an increased secretion, naturally not bloody.

Genus XL. Catarrhus. Pyrexia frequently contagious; an increased excretion of mucus, at least efforts to excrete it.

The species are for the most part symptomatic.

1. From cold.

2. From contagion.

Genus XLI. Dysenteria. Contagious pyrexia; frequent mucous or bloody stools, while the alvine feces are for the most part retained; gripes; tenesmus.

Varying:

1. Accompanied with worms.

2. With the excretion of small fleshy or sebaceous bodies.

3. With an intermittent fever.

4. Without blood.

5. With a miliary fever.

CLASS II. NEUROSES. An injury of the sense and motion, without an idiopathic pyrexia or any local affection.

ORDER. I. Comata. A diminution of voluntary motion, with sleep, or a deprivation of the senses.

Genus XLII. Apoplexia. Almost all voluntary motion diminished, with sleep more or less profound; the motion of the heart and arteries remaining.

The idiopathic species are,

1. Apoplexia (*sanguinea*) with symptoms of universal plethora, especially of the head.

2. Apoplexia (*serosa*) with a leucophlegmatia over the whole body, especially in old people.

3. Apoplexia (*hydrocephalica*) coming on by degrees; affecting infants, or those below the age of puberty, first with lassitude, a slight fever and pain of the head, then with slowness of the pulse, dilatation of the pupil of the eye, and drowsiness.

4. Apoplexia (*atrabilaria*) taking place in those of a melancholic constitution.

5. Apoplexia (*traumatica*) from some external injury mechanically applied to the head.

6. Apoplexia (*venenata*) from powerful sedatives taken internally or applied externally.

7. Apo-

General
Arrangement of
Diseases.

General
Arrangement
of
Diseases.

General
Arrangement
of
Diseases.

7. Apoplexia (*mentalis*) from a passion of the mind.
8. Apoplexia (*cataleptica*) the muscles remaining contractile, by external motion of the limbs.
9. Apoplexia (*suffocata*) from some external suffocating power.

The apoplexia is frequently symptomatic.

- 1 Of an intermitting fever. 2 Continued fever.
- 3 Phlegmasia. 4 Exanthema. 5 Hysteria. 6 Epilepsy.
- 7 Podagra. 8 Worms. 9 Ischuria. 10 Scurvy.

Genus XLIII. Paralysis. Only some of the voluntary motions diminished, frequently with sleep.

The idiopathic species are,

- 1 Paralysis (*partialis*) of some particular muscles only.

2. Paralysis (*hemiplegica*) of one side of the body.

Varying according to the constitution of the body.

- a. Hemiplegia in a plethoric habit.

- b. In a leucophlegmatic habit.

3. Paralysis (*paraplegica*) of one half of the body taken transversely.

4. Paralysis (*venenata*) from sedative powers applied either internally or externally.

A symptom either of an Asthenia or Palsy is,

Tremor; an alternate motion of a limb by frequent strokes and intervals.

The species are, 1 Asthenic. 2 Paralytic. 3 Convulsive.

ORDER II. Adynamia. A diminution of the involuntary motions whether vital or natural.

Genus XLIV. Syncope; a diminution, or even a total stoppage, of the motion of the heart for a little.

I. Idiopathic.

1. Syncope (*cardiaca*), returning frequently without any manifest cause, with violent palpitations of the heart during the intervals.—From a fault of the heart or neighbouring vessels.

2. Syncope (*occasionalis*) arising from some evident cause.—From an affection of the whole system.

II. Symptomatic; or symptoms of diseases either of the whole system, or of other parts besides the heart.

Genus XLV. Dyspepsia. Anorexia, nausea, vomiting, inflation, belching, rumination, cardialgia, gastrodynia, more or fewer of those symptoms at least concurring; for the most part with a constipation of the belly, and without any other disease either of the stomach itself or of other parts.

I. Idiopathic.

II. Symptomatic.

1. From a disease of the stomach itself.
2. From a disease of other parts, or of the whole body.

Genus XLVI. Hypochondriasis. Dyspepsia, with languor, sadness and fear without any adequate causes, in a melancholy temperament.

Genus XLVII. Chlorosis. Dyspepsia, or a desire of something not used as food; a pale or discoloured complexion; the veins not well filled; a soft tumor of the whole body; asthenia; palpitation; suppression of the menses.

ORDER III. Spasmi. Irregular motions of the muscles or muscular fibres.

Sect. I. In the animal functions.

VOL. XI. Part I.

Genus XLVIII. Tetanus;—a spastic rigidity of almost the whole body.

Varying according to the remote cause, as it arises either from something internal, from cold, or from a wound. It varies likewise from whatever cause it may arise, according to the part of the body affected.

Genus XLIX. Trismus. A spastic rigidity of the lower jaw.—The species are,

1. Trismus (*nascentium*), seizing infants under two months old.

2. Trismus (*traumaticus*), seizing people of all ages either from a wound or cold.

Genus L. Convulsio.—An irregular clonic contraction of the muscles without sleep.

I. Idiopathic.

II. Symptomatic.

Genus LI. Chorea, attacking those who have not yet arrived at puberty, most commonly within the 10th or 14th year, with convulsive motions for the most part of one side in attempting the voluntary motion of the hands and arms, resembling the gesticulations of mountebanks; in walking, rather dragging one of their feet after them than lifting it.

Genus LII. Raphania. A spastic contraction of the joints, with a convulsive agitation, and most violent periodical pain.

Genus LIII. Epilepsia. A convulsion of the muscles, with sleep.

The idiopathic species are,

1. Epilepsia (*cerebralis*), suddenly attacking without any manifest cause, without any sense of uneasiness preceding, excepting perhaps a slight vertigo or scotomia.

2. Epilepsia (*sympathica*), without any manifest cause, but preceded by the sensation of a kind of air rising from a certain part of the body towards the head.

3. Epilepsia (*occasionalis*), arising from a manifest irritation, and ceasing on the removal of that irritation.

Varying according to the difference of the irritating matter. And thus it may arise,

From injuries of the head; pain; worms; poison; from the repulsion of the itch, or an effusion of any other acrid humour; from crudities in the stomach; from passions of the mind; from an immoderate hemorrhagy; or from debility.

Sect. II. In the vital functions.

In the action of the heart.

Genus LIV. Palpitatio. A violent and irregular motion of the heart.

In the action of the lungs.

Genus LV. Asthma. A difficulty of breathing returning by intervals, with a sense of straitness in the breast, and a noisy respiration with hissing. In the beginning of the paroxysm there is either no cough at all, or coughing is difficult; but towards the end the cough becomes free, frequently with a copious spitting of mucus.—The idiopathic species are,

1. Asthma (*spontaneum*), without any manifest cause or other concomitant disease.

2. Asthma (*exanthematicum*), from the repulsion of the itch or other acrid effusion.

3. Asthma (*plethoricum*), from the suppression of some

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General
Arrangement of
Diseases.

General
Arrangement of
Diseases.

some customary sanguineous evacuation, or from a spontaneous plethora.

Genus LVI. *Dyspnœa*. A continual difficulty of breathing, without any sense of straitness, but rather of fullness and infarction in the breast; a frequent cough throughout the whole course of the disease.

The idiopathic species are,

1. *Dyspnœa (catarrhalis)*, with a frequent cough, bringing up plenty of viscid mucus.
2. *Dyspnœa (sicca)*, with a cough for the most part dry.
3. *Dyspnœa (aërea)*, increased by the least change of weather.
4. *Dyspnœa (terrea)*, bringing up with the cough an earthy or calculous matter.
5. *Dyspnœa (aquosa)*, with scanty urine and œdematous feet; without any fluctuation in the breast, or other signs of an hydrothorax.
6. *Dyspnœa (pinquedinosæ)*, in very fat people
7. *Dyspnœa (thoracica)*, from an injury done to the parts surrounding the thorax, or from some bad conformation of them.
8. *Dyspnœa (extrinseca)*, from evident external causes.

The symptomatic species of *dyspnœa* are symptoms,

1. Of diseases of the heart or large vessels.
2. Of a swelling in the abdomen.
3. Of various diseases.

Genus LVII. *Pertussis*. A contagious disease; convulsive strangulating cough reiterated with noisy inspiration; frequent vomiting.

Seçt. III. *In the natural functions.*

Genus LVIII. *Pyrosis*. A burning pain in the epigastrium, with plenty of aqueous humour, for the most part insipid, but sometimes acrid, belched up.

Genus LIX. *Colica*. Pain of the belly, especially twisting round the navel; vomiting; a constipation.

The idiopathic species are,

1. *Colica (spasmodica)*, with retraction of the navel, and spasms of the abdominal muscles.

Varying, by reason of some symptoms superadded. Hence,

a, *Colica*, with vomiting of excrements, or of matters injected by the anus.

b, *Colica*, with inflammation supervening.

2. *Colica (pistonum)*, preceded by a sense of weight or uneasiness in the belly, especially about the navel; then comes on the colic pain, at first slight and interrupted, chiefly augmented after meals: at length more severe and almost continual, with pains of the arms and back, at last ending in a palsy.

Varying according to the nature of the remote cause; and hence,

a, From metallic poison.

b, From acids taken inwardly.

c, From cold.

d, From a contusion of the back.

3. *Colica (stercorea)*, in people subject to costiveness.

4. *Colica (accidentalis)*, from acrid matter taken inwardly.

5. *Colica (meconialis)*, in new-born children from a retention of the meconium.

6. *Colic (callosa)*, with a sensation of stricture in some part of the intestines, and frequently of a collection of flatus with some pain before the constricted part; which flatus also passing through the part where the stricture is felt, gradually vanishes; the belly slow, and at last passing only a few liquid fæces.

7. *Colica (calculosa)*, with a fixed hardness in some part of the abdomen, and calculi sometimes passing by the anus.

Genus LX. *Cholera*. A vomiting of bilious matter, and likewise a frequent excretion of the same by stool; anxiety; gripes; spasms in the calves of the legs.

I. Idiopathic.

1. *Cholera (spontanea)*, arising in a warm season, without any manifest cause.

2. *Cholera (accidentalis)*, from acrid matters taken inwardly.

II. Symptomatic.

Genus LXI. *Diarrhœa*. Frequent stools; the disease not infectious; no primary pyrexia.

I. Idiopathic.

1. *Diarrhœa (crapulosa)*, in which the excrements are voided in greater quantity than naturally.

2. *Diarrhœa (biliosa)*, in which yellow feces are voided in great quantity.

3. *Diarrhœa (mucosa)*, in which either from acrid substances taken inwardly, or from cold, especially applied to the feet, a great quantity of mucus is voided.

4. *Diarrhœa (celiaca)*, in which a milky humour of the nature of chyle is passed.

5. *Diarrhœa (lienteria)*, in which the aliments are discharged with little alteration soon after eating.

6. *Diarrhœa (hepatirrhœa)*, in which a bloody serous matter is discharged without pain.

II. Symptomatic.

Genus LXII. *Diabetes*. A chronical profusion of urine, for the most part preternatural, and in immoderate quantity.

I. Idiopathic.

1. *Diabetes (mellitus)*, with urine of the smell, colour, and taste of honey.

2. *Diabetes (insipidus)*, with limpid, but not sweet, urine.

II. Symptomatic.

Genus LXIII. *Hysteria*. Rumbling of the bowels; a sensation as of a globe turning itself in the belly, ascending to the stomach and fauces, and there threatening suffocation; sleep; convulsions; a great quantity of limpid urine; the mind involuntarily fickle and mutable.

The following are by Sauvages reckoned distinct idiopathic species; but, by Dr Cullen, only varieties of the same species.

A, From a retention of the menses.

B, From a menorrhagia cruenta.

C, From a menorrhagia serosa, or fluor albus.

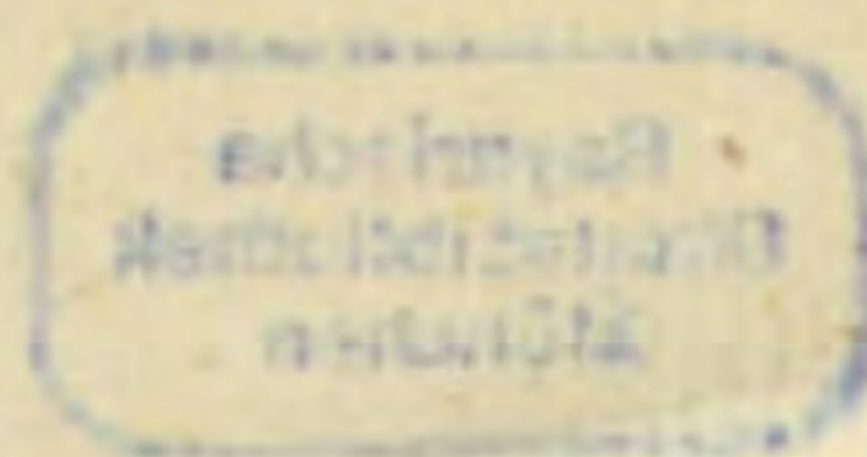
D, From an obstruction of the viscera.

E, From a fault of the stomach.

F, From too great salacity.

Genus LXIV. *Hydrophobia*. A dislike and horror at any kind of drink, as occasioning a convulsion of the pharynx; induced, for the most part, by the bite of a mad animal. The species are,

1. *Hydro-*



General
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Diseases.General
Arrange-
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Diseases.

I. Hydrophobia (*rabiosa*), with a desire of biting the bystanders, occasioned by the bite of a mad animal.

II. Hydrophobia (*simplex*), without madness, or any desire of biting.

ORDER IV. Vefaniæ. Disorders of the judgment, without any pyrexia or coma.

Genus LXV. Amentia; an imbecility of judgment, by which people either do not perceive, or do not remember, the relations of things. The species are,

I. Amentia (*congenita*), continuing from a person's birth.

II. Amentia (*senilis*), from the diminution of the perceptions and memory through extreme old age.

III. Amentia (*acquisita*), occurring in people formerly of a sound mind, from evident external causes.

Genus LXVI. Melancholia; a partial madness, without dyspepsia.

Varying according to the different subjects concerning which the person raves; and thus it is,

1. With an imagination in the patient concerning his body being in a dangerous condition, from slight causes; or that his affairs are in a desperate state.

2. With an imagination concerning a prosperous state of affairs.

3. With violent love, without satyriasis or nymphomania.

4. With a superstitious fear of a future state.

5. With an aversion from motion and all the offices of life.

6. With restlessness, and an impatience of any situation whatever.

7. With a weariness of life.

8. With a deception concerning the nature of the patient's species.

Dr Cullen thinks that there is no such disease as that called *demonomania*, and that the diseases mentioned by Sauvages under that title are either,

1. Species of melancholy or mania; or

2. Of some disease by the spectators falsely ascribed to the influence of an evil spirit; or

3. Of a disease entirely feigned; or

4. Of a disease partly true and partly feigned.

Genus LXVII. Mania; universal madness.

1. Mania (*mentalis*), arising entirely from passions of the mind.

2. Mania (*corporea*), from an evident disease of the body.

Varying according to the different disease of the body.

3. Mania (*obscura*), without any passion of mind or evident disease of the body preceding.

The symptomatic species of mania are,

1. Paraphrosyne from poisons.

2. Paraphrosyne from passion.

3. Paraphrosyne febrilis.

Genus LXVIII. Oneirodynia. A violent and troublesome imagination in time of sleep.

1. Oneirodynia (*activa*), exciting to walking and various motions.

2. Oneirodynia (*gravans*), from a sense of some weight incumbent, and pressing on the breast especially.

CLASS III. CACHEXIÆ; a depraved habit of the whole or greatest part of the body, without primary pyrexia or neurosis.

ORDER I. Marcores; a wasting of the whole body.

Genus LXIX. Tabes. Leanness, asthenia, hectic pyrexia. The species are,

1. Tabes (*purulenta*), from an external or internal ulcer, or from a vomica.

Varying in its situation: hence,

2. Tabes (*scrophulosa*), in scrophulous constitutions.

3. Tabes (*venenata*), from poison taken inwardly.

Genus LXX. Atrophia. Leanness and asthenia, without hectic pyrexia. The species are,

1. Atrophia (*inanitorum*), from too great evacuation.

2. Atrophia (*famelicorum*), from a deficiency of nourishment.

3. Atrophia (*cacochymica*), from corrupted nourishment.

4. Atrophia (*debilium*), from the function of nutrition being depraved, without any extraordinary evacuation or cacochymia having preceded.

ORDER II. Intumescentiæ. An external tumor of the whole or greatest part of the body.

Sect. I. *Adiposæ*.

Genus LXXI. Polysarcia; a troublesome swelling of the body from fat.

Sect. II. *Flatuosæ*.

Genus LXII. Pneumatosis; a tense elastic swelling of the body, crackling under the hand. The species are,

1. Pneumatosis (*spontanea*), without any manifest cause.

2. Pneumatosis (*traumatica*), from a wound in the breast.

3. Pneumatosis (*venenata*), from poison injected or applied.

4. Pneumatosis (*hysterica*), with hysteria.

Genus LXXIII. Tympanites; a tense, elastic, sonorous swelling of the abdomen; costiveness; a decay of the other parts. The species are,

1. Tympanites (*intestinalis*), with a tumor of the abdomen frequently unequal, and with a frequent evacuation of air relieving the tension and pain.

2. Tympanites (*abdominalis*), with a more evident noise, a more equable tumor, and a less frequent emission of flatus, which also gives less relief.

Genus LXXIV. Physometra; a slight elastic swelling in the epigastrium, having the figure and situation of the uterus.

Sect. III. *Aquosæ* or *Hydropes*.

Genus LXXV. Anasarca. A soft, inelastic swelling of the whole body, or some part of it. The species are,

1. Anasarca (*serosa*), from a retention of serum on account of the suppression of the usual evacuations, or from an increase of the serum on account of too great a quantity of water taken inwardly.

2. Anasarca (*oppilata*), from a compression of the veins.

3. Anasarca (*exanthematica*), arising after exanthemata, especially after the erysipelas.

N 2

4. Anasarca

General
Arrange-
ment of
Diseases.

4. Anasarca (*anæmia*), from the thinness of the blood produced by hemorrhagy.

5. Anasarca (*debilium*), in weak people after long diseases, or from other causes.

Genus LXXVI. Hydrocephalus. A soft inelastic swelling of the head, with the sutures of the cranium opened.

Genus LXXVII. Hydrorachitis. A soft, slender tumor above the vertebræ of the loins; the vertebræ gaping from each other.

Genus LXXVIII. Hydrothorax. Dyspnœa; paleness of the face; œdematous swellings of the feet; scanty urine; lying down difficult; a sudden and spontaneous waking out of sleep, with palpitation; water fluctuating in the breast.

Genus LXXIX. Ascites. A tense, scarce elastic, but fluctuating swelling of the abdomen. The species are,

1. Ascites (*abdominalis*), with an equal swelling of the whole abdomen, and with a fluctuation sufficiently evident.

Varying according to the cause.

A, From an obstruction of the viscera.

B, From debility.

C, From a thinness of the blood.

2. Ascites (*saccatus*), with a swelling of the abdomen, in the beginning at least, partial, and with a less evident fluctuation.

Genus LXXX. Hydrometra. A swelling of the hypogastrium in women, gradually increasing, keeping the shape of the uterus, yielding to pressure, and fluctuating; without ischuria or pregnancy.

Genus LXXXI. Hydrocele. A swelling of the scrotum, not painful; increasing by degrees, soft, fluctuating, and pellucid.

Sect. IV. *Solide*.

Genus LXXXII. Physconia. A swelling chiefly occupying a certain part of the abdomen, gradually increasing, and neither sonorous nor fluctuating. The species are,

Physconia hepatica.

Physconia splenica.

Physconia renalis.

Physconia uterina.

Physconia ab ovario.

Physconia mesenterica.

Physconia intestinalis.

Physconia omentalis.

Physconia polysplachna.

Physconia visceralis.

Physconia externa lupialis.

Physconia externa scirrhouea.

Physconia externa hydatidosa.

Physconia ab adipe subcutaneo.

Physconia ab excrecentia.

Genus LXXXIII. Rachitis. A large head, swelling most in the forepart, the ribs depressed; abdomen swelled, with a decay of the other parts.

Varying,

1. Simple, without any other disease.

2. Joined with other diseases.

ORDER III. Impetigines. Cachexies chiefly deforming the skin and external parts of the body.

Genus LXXXIV. Scrophula. Swellings of the conglobate glands, especially in the neck; swelling of the upper lip and support of the nose; the face florid, skin thin, abdomen swelled. The species are,

1. Scrophula (*vulgaris*), simple, external, and permanent.

2. Scrophula (*mesenterica*), simple, internal, with paleness of the face, want of appetite, swelling of the abdomen, and unusual fetor of the excrements.

3. Scrophula (*fugax*), most simple, appearing only about the neck; for the most part proceeding from the resorption of the matter of ulcers in the head.

4. Scrophula (*Americana*), joined with the yaws.

Genus LXXXV. Syphilis. A contagious disease, after impure venery, and a disorder of the genitals; ulcers of the tonsils; of the skin, especially about the margin of the hair; corymbose papulæ, ending in crusts and crusty ulcers; pains of the bones; exostoses.

Genus LXXXVI. Scorbutus; in cold countries, attacking after putrescent diet, especially such as is salt and of the animal-kind, where no supply of fresh vegetables is to be had; asthenia; stomacace; spots of different colours on the skin, for the most part livid, and appearing chiefly among the roots of the hair.

Varying in degree.

a, Scorbutus incipiens.

b, Scorbutus crescens.

c, Scorbutus inveteratus.

Varying also in symptoms.

d, Scorbutus lividus.

e, Scorbutus petechialis.

f, Scorbutus pallidus.

g, Scorbutus ruber.

h, Scorbutus calidus.

Genus LXXXVII. Elephantiasis; a contagious disease; thick, wrinkled, rough, unctuous skin, destitute of hairs, anæsthesia in the extremities, the face deformed with pimples, the voice hoarse and nasal.

Genus LXXXVIII. Lepra; the skin rough, with white, branny, and chopped eschars, sometimes moist beneath, with itching.

Genus LXXXIX. Frambœsia; swellings resembling fungi, or the fruit of the mulberry or raspberry, growing on various parts of the skin.

Genus XC. Trichoma; a contagious disease; the hairs thicker than usual, and twisted into inextricable knots and cords.

Genus XCI. Icterus; yellowness of the skin and eyes; white fæces; urine of a dark red, tinging what is put into it of a clay colour.

The idiopathic species are,

1. Icterus (*calculosus*), with acute pain in the epigastric region, increasing after meals; biliary concretions voided by stool.

2. Icterus (*spasmodicus*), without pain, after spasmodic diseases and passions of the mind.

3. Icterus (*hepaticus*), without pain, after diseases of the liver.

4. Icterus (*gravidarum*), arising during the time of pregnancy, and going off after delivery.

5. Icterus (*infantum*), coming on in infants a few days after birth.

CLASS

CLASS IV. LOCALES. An affection of some part, but not of the whole body.

ORDER I. Dysethesiæ. The senses depraved or destroyed, from a disease of the external organs.

Genus XCII. Caligo. The sight impaired or totally destroyed, on account of some opaque substance interposed between the objects and the retina, inherent in the eye itself or the eye-lids. The species are,

1. Caligo (*lentic*), occasioned by an opaque spot behind the pupil.
2. Caligo (*corneæ*), from an opacity of the cornea.
3. Caligo (*pupillæ*), from an obstruction of the pupil.

Varying according to the different causes from which it proceeds.

4. Caligo (*humorum*), from a disease or defect of the aqueous humour.

Varying according to the different state of the humour.

5. Caligo (*palpebrarum*), from a disease inherent in the eye-lids.

Varying according to the nature of the disease in the eye-lids.

Genus XCIII. Amaurosis. The sight diminished, or totally abolished, without any evident disease of the eye; the pupil for the most part remaining dilated and immoveable. The species are,

1. Amaurosis (*compressionis*), after the causes and attended with the symptoms of congestion in the brain.

Varying according to the nature of the remote cause.

2. Amaurosis (*atonica*), after the causes and accompanied with symptoms of debility.

3. Amaurosis (*spasmodica*), after the causes and with the signs of spasm.

4. Amaurosis (*venenata*), from poison taken into the body or applied outwardly to it.

Genus XCIV. Dysopia. A depravation of the sight, so that objects cannot be distinctly perceived, except at a certain distance, and in a certain situation. The species are,

1. Dysopia (*tenebrarum*), in which objects are not seen unless they be placed in a strong light.

2. Dysopia (*luminis*), in which objects are not distinctly seen unless by a weak light.

3. Dysopia (*diffusorum*), in which distant objects are not perceived.

4. Dysopia (*proximorum*), in which the nearest objects are not perceived.

5. Dysopia (*lateralis*), in which objects are not perceived unless placed in an oblique posture.

Genus XCV. Pseudoblepsis; when the sight is diseased in such a manner that the person imagines he sees things which really do not exist, or sees things which do exist after some other manner than they really are. The species are,

1. Pseudoblepsis (*imaginaria*), in which the person imagines he sees things which really do not exist.

Varying according to the nature of the imagination.

2. Pseudoblepsis (*mutans*), in which objects really existing appear somehow changed.

Varying according to the change perceived in the objects, and according to the remote cause.

Genus XCVI. Dysecœa. A diminution or total abolition of the sense of hearing. The species are,

1. Dysecœa (*organica*), from a disease in the organs transmitting sounds to the internal ear.

Varying according to the nature of the disease and of the part affected.

2. Dysecœa (*atonica*), without any evident disease of the organs transmitting the sounds.

Varying according to the nature of the cause.

Genus XCVII. Paracusis; a depravation of the hearing. The species are,

1. Paracusis (*imperfecta*), in which though sounds coming from external objects are heard, yet it is neither distinctly nor in the usual manner.

Varying,

- a, With a dulness of hearing.

- b, With an hearing too acute and sensible.

- c, When a single external sound is doubled by some internal causes.

- d, When the sounds which a person desires to hear are not perceived, unless some other violent sound is raised at the same time.

2. Paracusis (*imaginaria*), in which sounds not existing externally are excited from internal causes.

Varying according to the nature of the sound perceived, and according to the nature of the remote cause.

Genus XCVIII. Anosmia; a diminution or abolition of the sense of smell. The species are,

1. Anosmia (*organica*), from a disease in the membrane lining the internal parts of the nostrils.

Varying according to the nature of the disease.

2. Anosmia (*atonica*), without any evident disease of the membrane of the nose.

Genus XCIX. Agheusia; a diminution or abolition of the sense of taste.

1. Agheusia (*organica*), from a disease in the membrane of the tongue, keeping off from the nerves those substances which ought to produce taste.

2. Agheusia (*atonica*), without any evident disease of the tongue.

Genus C. Anæsthesia; a diminution or abolition of the sense of feeling. The species from Sauvages, adopted by Dr Cullen, are,

1. Anæsthesia a spina bifida.

2. Anæsthesia plethorica.

3. Anæsthesia nascentium.

4. Anæsthesia melancholica.

ORDER II. Dyforexia; error or defect of appetite.

Sect. I. Appetitus erronei.

Genus CI. Bulimia; a desire for food in greater quantities than can be digested.

The idiopathic species are,

1. Bulimia (*belluonum*), an unusual appetite for food, without any disease of the stomach.

2. Bulimia (*syncopalis*), a frequent desire of meat, on account of a sensation of hunger threatening syncope.

3. Bulimia (*emetica*), an appetite for a great quantity of meat, which is thrown up immediately after it is taken.

Genus CII. Polydipsia; an appetite for an unusual quantity of drink.

The polydipsia is almost always symptomatic, and varies.

General
Arrangement
of
Diseases.

General
Arrangement
of
Diseases.

varies only according to the nature of the disease which accompanies it.

Genus CIII. Pica; a desire of swallowing substances not used as food.

Genus CIV. Satyriasis; an unbounded desire of venery in men. The species are,

1. Satyriasis (*juvenilis*), an unbounded desire of venery, the body at the same time being little disordered.

2. Satyriasis (*furens*), a vehement desire of venery, with a great disorder of the body at the same time.

Genus CV. Nymphomania; an unbounded desire of venery in women.

Varying in degree.

Genus CVI. Nostalgia; a violent desire in those who are absent from their country of revisiting it.

1. Nostalgia (*simplex*), without any other disease.

2. Nostalgia (*complicata*), accompanied with other diseases.

SECT. II. Appetitus deficientes.

Genus CVII. Anorexia. Want of appetite for food. Always symptomatic.

1. Anorexia (*humoralis*), from some humour loading the stomach.

2. Anorexia (*atonica*), from the tone of the fibres of the stomach being lost.

Genus CVIII. Adipsia; a want of thirst. Always a symptom of some disease affecting the sensorium commune.

Genus CIX. Anaphrodisia; want of desire for, or impotence to, venery.

The true species are,

1. Anaphrodisia paralytica.

2. Anaphrodisia gonorrhoeica.

The false ones are,

1. Anaphrodisia a mariscis.

2. Anaphrodisia ab urethrae vitio.

ORDER III. Dyscinesia. An impediment, or depravation of motion from a disorder of the organs.

Genus CX. Aphonia; a total suppression of voice without coma or syncope. The species are,

1. Aphonia (*gutturalis*), from the fauces or glottis being swelled.

2. Aphonia (*trachealis*), from a compression of the trachea.

3. Aphonia (*atonica*), from the nerves of the larynx being cut.

Genus CXI. Mutitas; a want of power to pronounce words. The species are,

1. Mutitas (*organica*), from the tongue being cut out or destroyed.

2. Mutitas (*atonica*), from the injuries done to the nerves of the tongue.

3. Mutitas (*surdorum*), from people being born deaf, or the hearing being destroyed during childhood.

Genus CXII. Paraphonia; a depraved sound of the voice. The species are,

1. Paraphonia (*puberum*), in which, about the time of puberty, the voice from being acute and sweet, becomes more grave and harsh.

2. Paraphonia (*rauca*), in which, by reason of the dryness or flaccid tumor of the fauces, the voice becomes rough and hoarse.

2. Paraphonia (*resonans*), in which, by reason of an obstruction in the nostrils, the voice becomes hoarse, with a sound hissing through the nostrils.

4. Paraphonia (*palatina*), in which, on account of a defect or division of the uvula, for the most part with an hare-lip, the voice becomes obscure, hoarse, and unpleasant.

5. Paraphonia (*clangens*), in which the voice is changed to one acute, shrill, and small.

6. Paraphonia (*comatosa*), in which, from a relaxation of the velum palati and glottis, a sound is produced during inspiration.

Genus CXIII. Pseudismus; a defect in the articulation of words. The species are,

1. Pseudismus (*hesitans*), in which the words, especially the first ones of a discourse, are not easily pronounced, and not without a frequent repetition of the first syllable.

2. Pseudismus (*ringens*), in which the sound of the letter R is always aspirated, and, as it were, doubled.

3. Pseudismus (*lallans*), in which the sound of the letter L becomes more liquid, or is pronounced instead of R.

4. Pseudismus (*emolliens*), in which the hard letters are changed into the softer ones, and thus the letter S is much used.

5. Pseudismus (*balbutiens*), in which, by reason of the tongue being large, or swelled, the labial letters are better heard, and often pronounced instead of others.

6. Pseudismus (*acheilos*), in which the labial letters cannot be pronounced at all, or with difficulty.

7. Pseudismus (*logostomatium*), in which, on account of the division of the palate, the guttural letters are less perfectly pronounced.

Genus CXIV. Strabismus; the optic axes of the eyes not converging. The species are,

1. Strabismus (*habitualis*), from a bad custom of using only one eye.

2. Strabismus (*commodus*), from the greater debility or mobility of one eye above the other; so that both eyes cannot be conveniently used.

3. Strabismus (*necessarius*), from a change in the situation or shape of the parts of the eye.

Genus CXV. Contractura; a long-continued and rigid contraction of one or more limbs. The species are,

1. Contractura (*primaria*), from the muscles becoming contracted and rigid.

a, From the muscles becoming rigid by inflammation.

b, From muscles becoming rigid by spasm.

c, From muscles contracted by reason of their antagonists having become paralytic.

d, From muscles contracted by an irritating acrimony.

2. Contractura (*articularis*), from stiff joints.

ORDER IV. Apoceneses. A flux either of blood or some other humour flowing more plentifully than usual, without pyrexia, or an increased impulse of fluids.

Genus CXVI. Profusio; a flux of blood.

Genus CXVII. Ephidrosis; a preternatural evacuation of sweat.

Symptomatic ephidroses vary according to the nature of the diseases which they accompany, the different nature of the sweat itself, and sometimes the different parts of the body which sweats most.

Genus CXVIII. Epiphora; a flux of the lacrymal humour.

Genus CXIX. Ptyalismus; a flux of saliva.

Genus CXX. Enuresis; an involuntary flux of urine without pain. The species are,

1. Enuresis (*atonica*), after diseases injuring the sphincter of the bladder.
2. Enuresis (*irritata*), from a compression or irritation of the bladder.

Genus CXXI. Gonorrhœa; a preternatural flux of humour from the urethra in men, with or without a desire of venery. The species are,

1. Gonorrhœa (*pura*), in which, without any impure venery having preceded, a humour resembling pus, without dysuria or propensity to venery, flows from the urethra.

2. Gonorrhœa (*impura*), in which, after impure venery, an humour like pus flows from the urethra with dysuria. The consequence of this is,

Gonorrhœa (*mucosa*), in which, after an impure gonorrhœa, a mucous humour flows from the urethra with little or no dysuria.

3. Gonorrhœa (*laxorum*), in which an humour for the most part pellucid, without any erection of the penis, but with a propensity to venery, flows from the urethra while the person is awake.

4. Gonorrhœa (*dormientium*), in which the seminal liquor is thrown out, with erection and desire of venery, in those who are asleep and have lascivious dreams.

ORDER V. Epischemes; suppressions of evacuations.

Genus CXXII. Obstipatio; the stools either suppressed, or slower than usual. The species are,

1. Obstipatio (*debilium*), in lax, weak, and for the most part dyspeptic persons.

2. Obstipatio (*rigidorum*), in people whose fibres are rigid, and frequently of an hypochondriac disposition.

3. Obstipatio (*obstructorum*), with symptoms of the colica 1st, 2d, 4th, and 7th, abovementioned.

Genus CXXIII. Ischuria; an absolute suppression of urine. The species are,

1. Ischuria (*renalis*), coming after a disease of the kidneys, with pain, or troublesome sense of weight in the region of the kidneys, and without any swelling of the hypogastrium, or desire of making water.

2. Ischuria (*ureterica*), coming after a disease of the kidneys, with a sense of pain or uneasiness in some part of the ureter, and without any tumor of the hypogastrium, or desire of making water.

3. Ischuria (*vesicalis*), with a swelling of the hypogastrium, pain at the neck of the bladder, and a frequent stimulus to make water.

4. Ischuria (*urethralis*), with a swelling of the hypogastrium, frequent stimulus to make water, and pain in some part of the urethra.

All these species are subdivided into many varieties, according to their different causes.

Genus CXXIV. Dysuria; a painful, and somehow impeded emission of urine. The species are,

1. Dysuria (*ardens*), with heat of water, without any manifest disorder of the bladder.

2. Dysuria (*spasmodica*), from a spasm communicated from the other parts to the bladder.

3. Dysuria (*compressionis*), from the neighbouring parts pressing upon the bladder.

4. Dysuria (*phlogistica*), from an inflammation of the neighbouring parts.

5. Dysuria (*irritata*), with signs of a stone in the bladder.

6. Dysuria (*mucosa*), with a copious excretion of mucus.

Genus CXXV. Dyspermatismus; a slow, impeded, and insufficient emission of semen in the venereal act. The species are,

1. Dyspermatismus (*urethralis*), from diseases of the urethra.

2. Dyspermatismus (*nodosus*), from knots on the cavernous bodies.

3. Dyspermatismus (*præputialis*), from too narrow an orifice of the prepuce.

4. Dyspermatismus (*mucosus*), from mucus infarcating the urethra.

5. Dyspermatismus (*hypertonicus*), from too strong an erection of the penis.

6. Dyspermatismus (*epilepticus*), from a spasmodic epilepsy happening during the time of coition.

7. Dyspermatismus (*apræstodes*), from an imbecility of the parts of generation.

8. Dyspermatismus (*refluus*), in which there is no emission of semen, because it returns from the urethra into the bladder.

Genus CXXVI. Amenorrhœa. The menses either flowing more sparingly than usual, or not at all, at their usual time, without pregnancy. The species are,

1. Amenorrhœa (*emansionis*), in those arrived at puberty, in whom, after the usual time, the menses have not yet made their appearance, and many different morbid affections have taken place.

2. Amenorrhœa (*suppressionis*), in adults, in whom the menses which had already begun to flow are suppressed.

3. Amenorrhœa (*difficilis*), in which the menses flow sparingly, and with difficulty.

ORDER VI. Tumores; an increased magnitude of any part without phlogosis.

Genus CXXVII. Aneurisma; a soft tumor, with pulsation, above an artery,

Genus CXXVIII. Varix; a soft tumor, without pulsation, above a vein.

Genus CXXIX. Ecchymoma; a diffused, and scarce eminent, livid tumor.

Genus CXXX. Scirrhus; an hard tumor of some part, generally of a gland, without pain, and difficultly brought to suppuration.

Genus CXXXI. Cancer. A painful tumor of a scirrhus nature, and degenerating into an ill-conditioned ulcer.

Genus CXXXII. Bubo; a suppurating tumor of a conglobate gland.

Genus CXXXIII. Sarcoma; a soft swelling, without pain.

Genus CXXXIV. Verruca; a harder scabrous swelling.

Genus CXXXV. Clavus; a hard, lamellated thickness of the skin.

Genus

Genus CXXXVI. Lupia. A moveable, soft tumour below the skin, without pain.

Genus CXXXVII. Ganglion. An harder moveable swelling, adhering to a tendon.

Genus CXXXVIII. Hydatis; a cuticular vesicle filled with aqueous humour.

Genus CXXXIX. Hydarthrus; a most painful swelling of the joints, chiefly of the knee, at first scarce elevated, of the same colour with the skin, diminishing the mobility.

Genus CXL. Exostosis; a hard tumor adhering to a bone.

ORDER VII. Ectopiæ; tumors occasioned by the removal of some part out of its proper situation.

Genus CXXI. Hernia; an ectopia of a soft part as yet covered with the skin and other integuments.

Genus CXLII. Prolapsus; a bare ectopia of some soft part.

Genus CXLIII. Luxatio; the removal of a bone from its place in the joints.

ORDER VIII. Dialyses. A solution of continuity; manifest to the sight or touch.

Genus CXLIV. Vulnus; a recent and bloody solution of the unity of some soft part by the motion of some hard body.

Genus CXLV. Ulcus. A purulent or ichorous solution of a soft part.

Genus CXLVI. Herpes; a great number of phlyctenæ or small ulcers, gathering in clusters, creeping, and obstinate.

Genus CXLVII. Tinea; small ulcers among the roots of the hair of the head, pouring out a humour which changes to a white friable scurf.

Genus CXLVIII. Pfora. Itchy pustules and little ulcers of an infectious nature, chiefly infesting the hands.

Genus CXLIX. Fractura; bones broken into large fragments.

Genus CL. Caries; an exulceration of a bone.

Having thus presented to our readers Dr Cullen's general systematic view of all the diseases to which the human body is subjected, we come next to give a more particular account of the more important affections, treating of them in the order which Dr Cullen has arranged them.

124

CLASS I. PYREXIÆ, or the Febrile Diseases.

ORDER I. FEBRES, Or FEVERS strictly so called.

125

Sauv. Class II. *Vog.* Class I. *Sagar.* Class XII. *Morbi Febriles Critici, Lin.* Class II.

SECT. I. INTERMITTENTS.

Intermittentes of some authors; *Sauv.* Class II. *Order III.* *Lin.* Class II. *Order II.* *Vog.* Class I. *Order I.* *Sag.* Class XII. *Order III.*

The *remittentes* of others, *Sauv.* Class II. *Order II.* *Sag.* Class XII. *Order II.*

Exacerbantes, Lin. Class II. *Order III.*

Continuæ, Vog. Class I. *Order II.*

Nº 203.

GENUS I. TERTIANA; the TERTIAN FEVER.

Tertiana.

(*Tertiana, Sauv.* G. 88. *Lin.* 16. *Hoffm.* *Stahl.* *Cleg-*
horn *Senac.*

The Genuine TERTIAN.

126

(*Tertiana legitima, Senert. Hoffm. Clegborn, Minorc. Sauv. Sp. I.*)

1. *Description.* This disease, in its most regular form, consists of repeated paroxysms, returning every second day, the patient during the intermediate period enjoying apparently a state of good health. This is the most common form of ague, as it is commonly called in Britain. Each paroxysm consists of three parts, the cold, the hot, and the sweating stages. The paroxysm commonly begins with a remarkable shivering, increasing frequently to a convulsive shaking of the limbs. The extremities are always cold, sometimes remarkably so. The cold for the most part is first perceived about the lumbar regions, from thence ascending along the spine turns towards the pit of the stomach. Sometimes it begins in the first joint of the fingers and tip of the nose. Sometimes it attacks only a particular part of the body, as one of the arms, the side of the head, &c. This cold is often preceded by a heavy and sleepy torpor, languor, and lassitude, which we are partly to ascribe to real weakness and partly to mere laziness. To these symptoms succeed yawning and stretching; after which the cold comes on as above described, not unfrequently with a pain of the back, and a troublesome sensation of tension in the precordia and hypochondria. To this succeed nausea and vomiting; and the more genuine the disease, the more certainly does the vomiting come on; by which a great deal of tough mucous matter, and sometimes bilious stuff or indigested food is evacuated during the first paroxysms. In some there is only a violent straining to vomit, without bringing up any thing: sometimes, instead of these symptoms, a diarrhœa occurs; and this chiefly in weak, phlegmatic, and aged people, or where an indigested mucous saburra has long remained in the primæ viæ.

When these symptoms have continued for an hour or two, the cold begins to go off, and is succeeded by a lassitude, languor, and flaccidity of the whole body, but chiefly in the limbs, with an uneasy soreness as if the parts had been bruised; excepting in those cases where the nausea continues for a longer time. After this languor, a heat comes on, the increase of which is generally slow, but sometimes otherwise, with pain of the head, thirst, and bitterness in the mouth. The pulse is quick and unequal; sometimes beating 130 strokes in a minute. As soon as this heat has abated, a little moisture or sweat is observed to break forth; not always indeed in the first, but always in the succeeding paroxysms, and the urine lets fall a quantity of lateritious sediment. The whole paroxysm is scarce ever over in less than six hours, more frequently eight, and in violent cases extends to 12 hours; but that which exceeds 12 hours is to be reckoned a spurious kind, and approaching to the nature of continued fevers. All these symptoms, however, are repeated every second day, in such a manner that the patient is quite free from fever for at least 24 hours. The paroxysms return much about the same time, though sometimes a little sooner or later.

3. *Causes*

Febres

Tertiana.

3. *Causes of this disease, and persons subject to it.* The genuine tertian attacks men rather than women, young people rather than old; the latter being more subject to anomalous tertians. It likewise seizes the lusty and active, rather than the lazy and indolent. Those, however, who are apt to nauseate their meat, fall easily into a tertian fever. The cause, according to Dr Cullen, is the miasma of marshes, and that only. Other physicians have taken in many more causes, almost every thing indeed which debilitates the body: but the Doctor denies that any of these, though they may dispose the body for receiving the disease, or may augment it, can by any means produce it without the concurrence of the marsh miasma; and it cannot be denied, that it is a disease almost peculiar to marshy situations. Thus we find it very frequent in the fenny counties of Britain, although in other parts of this island it may be considered as a rare disease.

3. *Prognosis.* The genuine simple tertian, unless improper medicines be administered, is generally very easily cured; nay, the vulgar reckon it of such a salutary nature, that after it they imagine a person becomes more strong and healthy than before. Hippocrates has observed, that these fevers terminate of their own accord after seven or nine paroxysms. Juncker tells us, that it frequently terminates before the seventh paroxysm, but rarely before the fourth. He also denies that any thing critical is to be observed in its going off; but in this he differs from Vogel, who tells us, that the urine, for some days after the fever is quite gone off, appears slimy, and lets fall much sediment. The latter also informs us, that besides the common crisis by sweat and urine, the tertian hath one peculiar to itself, namely, dry scabby ulcers breaking out upon the lips. These sometimes appear about the third or fourth paroxysm; and then we may venture to foretel that the disease will go off spontaneously after the seventh. But though the disease be never dangerous, in cold climates at least, when properly treated; yet the improper use of hot and stimulating medicines may change it into a continued fever, more or less dangerous according to the quantity of medicines taken and the constitution of the patient; in which case the prognosis must be regulated by the particular symptoms which occur. In warm climates, however, the tertian fever may be considered as a much more dangerous disease; and unless the most powerful remedies be employed, the patient is in danger of falling a victim to every paroxysm.

A variety of theories have been proposed for explaining the phenomena of this affection; but we may easily assert, that every thing hitherto said upon the subject is highly unsatisfactory. For although it be now almost universally admitted, that this fever does arise from the effluvia of marshes, yet in what manner the action of those effluvia induces fever, and particularly why this fever returns in regular paroxysm, are questions with regard to which we are still totally in the dark. Dr Cullen, with much ingenuity, attempted to prove, that the remote causes of this, as well as of other fevers, operated by inducing a state of debility; that this debility gives rise to spasm, induces increased

action, from which the phenomena are to be explained. But this theory is liable to no less numerous and unfurmountable objections than the exploded hypotheses which had before been proposed by others. For it is an undeniable truth, that debility often exists, even to the highest imaginable degree, without any fever; nay, that when fever has taken place, the debility is often much greater after it is entirely gone than at any period during its course. When spasm and increased action do take place, we have no reason to view them in any other light than merely as symptoms of the disease; and while they are often absent in this affection, they frequently occur in others where the sickness, anxiety, and other characterising symptoms of fever are entirely absent: and, upon the whole, a probable or rational theory of intermittents, as well as of other fevers, still remain to be discovered.

Cure. The treatment of all genuine intermittents, whether *tertians*, *quotidians*, or *quartans*, being almost precisely the same, the general method of cure applicable to them all may be here given, to which it will be easy to refer when we come to describe the others.

In treating intermittent fevers, physicians have formed indications of cure according to their different theories. The followers of Boerhaave, Stahl, &c. who imagined that the disease proceeded from a lentor or other disorders in the blood, always thought it necessary to correct and evacuate these peccant humours by emetics and purgatives before they attempted to stop the disease by the Peruvian bark or any other medicine. The bark, indeed, among some, seems to be held in very little estimation by them; since Vogel affirms, that this medicine, instead of deserving to have the preference of all other febrifuge medicines, ought rather to be ranked among the lowest of the whole; and for this reason he ascribes the cures, said to be obtained by the use of the Peruvian bark, entirely to nature.

According to Dr Cullen, the indications of cure in intermitting fevers may be reduced to the following.

1. In the time of intermission, to prevent the return of the paroxysms.
2. In the time of paroxysms, to conduct these in such a manner as to obtain a final solution of the disease.
3. To take off certain circumstances which might prevent the fulfilling of the two first indications.

The first indication may be answered in two ways. 1. By increasing the action of the heart and arteries some time before the period of accession, and supporting that increased action till the period of accession be over, and thus to prevent the recurrence of that atony and spasm of the extreme vessels, which he thinks give occasion to the recurrence of paroxysms. 2. By supporting the tone of the vessels, and thereby preventing atony and the consequent spasm, without increasing the action of the heart and arteries, the recurrence of paroxysms may be prevented.

The action of the heart and arteries may be increased, 1. By various stimulant remedies internally given or externally applied, and that without exciting sweat. 2. By the same remedies, or others, managed in such a manner as to excite sweating, and to support that sweating

Febris

sweating till the period of accession be for some time past. 3. By emetics, supporting for the same time the tone and action of the extreme vessels.

The tone of the extreme vessels may be supported without increasing the action of the heart and arteries, by various tonic medicines; as, 1. Astringents alone. 2. Bitters alone. 3. Astringents and bitters conjoined. 4. Astringents and aromatics conjoined. 5. Certain metallic tonics; and, 6. Opiates. A good deal of exercise, and as full a diet as the condition of the patient's appetite and digestion allow of, will be proper during the time of intermission, and may be considered as belonging to this head. Although many particulars in this plan of cure are deduced from Dr Cullen's theory, yet there can be no doubt that the object chiefly to be aimed at is to employ such remedies during the intermissions as will prevent a recurrence of the paroxysm. Of all the remedies hitherto employed with this intention, the most celebrated, perhaps the most certainly effectual, is the Peruvian bark; or, to speak more properly, the bark of the *Cinchona officinalis* of Linnæus. But it must be observed, that good effects are only to be expected from this medicine when given in substance and in large quantity; and for its use the following rules or observations have been given.

1. The bark may with safety be employed at any period of intermitting fevers, providing that at the same time there be neither a phlogistic diathesis prevailing in the system, nor any considerable or fixed congestion present in the abdominal viscera.

2. The proper time for exhibiting the bark in intermitting fevers is during the time of intermission, and it is to be abstained from in the time of paroxysms.

3. In the case of genuine intermittents, while a due quantity of bark is employed, the exhibition of it ought to be brought as near to the time of accession as the condition of the patient's stomach will allow.

4. In all cases of intermittents, it is not sufficient that the recurrence of paroxysms be stopped for once by the use of the bark; a relapse is commonly to be expected, and should be prevented by the exhibition of the bark repeated at proper intervals.

The advantage of administering the bark as early as possible, was fully ascertained by Dr Lind in the years 1765, 66, and 67, during an uncommon prevalence of intermittents. When the disease was stopped by the bark immediately after the first or second fit, which was the case with 200 of the Doctor's patients as well as himself, neither a jaundice nor dropsy ensued; whereas, when the bark could not be administered, on account of the imperfect remission of the fever, or when the patient had neglected to take it, either a dropsy, jaundice, or constant headach, were the certain consequences; and the violence of the disease was in proportion to the number of the preceding fits, or to the continuance of the fever. By every paroxysm the dropsical swellings were visibly increased, and the colour of the skin rendered of a deeper yellow. When the fever continued a few days without remission, the belly and legs generally swelled; a violent headach, likewise, and vertigo, for the most part distressed the patient; so that some, even after the fever had left them, were not able to walk across their chamber for a fortnight or three weeks. When the returns of the

fever were regular and even, but slight, four or five fits of a simple tertian were sometimes followed by the most dangerous symptoms; especially in the year 1765, when these fevers raged with the greatest violence. If, as frequently happened, a dropsical patient relapsed into the ague, there was an absolute necessity for putting an immediate stop to it by the bark; and in upwards of 70 such patients, Dr Lind observed the most beneficial effects to accrue from this practice. He never prescribed the bark until the patient was free from all symptoms of the fever; but in that case, without regard to a cough, or any other chronical indisposition, he ordered it to be given in large doses.

The bark has been often observed to fail in removing intermittents, from not continuing the use of it for a sufficient length of time, from administering it in too small a dose, or from giving it in an improper form. It was a prevailing opinion, that an ounce, or an ounce and an half, of the bark, taken during one intermission, is sufficient to prevent the return of another paroxysm. But this is not always the case; for a severe fit will often attack a patient who has taken such a quantity. When this happens, the patient ought to persevere during the following intermissions, with an increase of the dose, till five or six ounces at least have been taken. The medicine also ought not to be omitted as soon as one fit is stopped, but should be continued in a smaller dose, and after longer intervals, for at least ten days or a fortnight. Even for several months after the disease is entirely removed, it would be advisable to take a little bark occasionally in damp weather, or during an easterly wind, to prevent a relapse. Where the intervals between the fits are short, as in quotidians and double tertians, from one to two drachms of it ought to be taken every two or three hours.

The form in which this medicine is administered is of some consequence. Mucilages and syrups have been recommended to conceal the taste of it; but, from various experiments, Dr Lind found nothing more effectual for this purpose than small-beer or milk, especially the latter. A drachm of bark mixed with two ounces of milk, and quickly drank, may easily be taken by a person of the most delicate taste, and by washing the mouth afterwards with milk there will not remain the least flavour of the bark; but if the mixture be not drank immediately, the bark will impart a bitter taste to the milk. This medicine is commonly given in electuaries or boluses; but Dr Lind observes, that in these forms it proves much less efficacious than when administered in juleps or draughts, with the plentiful addition of wine or spirits. He has remarked, that six drachms of powdered bark, given in a julep, consisting of one fourth or one third of brandy, is as effectual as an ounce of the powder in the form of an electuary, and proves less disagreeable to the stomach. For patients unaccustomed to wine or spirits, each draught should be warmed with spiritus salis ammoniaci, or tinct. myrrh. by both of which the efficacy of the bark is increased. Dr Lind is also fully convinced that wine or spirits improve the virtues of the bark much more than elixir vitrioli, tinct. rosar. or such other medicines as have been recommended by different physicians.

For those who nauseate the bark from a weakness of

Febres

Tertiana.

of the stomach or other cause, he advises it to be given in clysters, in which form it is as efficacious as when taken by the mouth. For this purpose the extract is most proper with the addition of a sufficient quantity of the tinctura thebaica, in order to its being longer retained. For children labouring under intermitting fevers, Dr Lind orders the spine of the back to be anointed, at the approach of the fit, with a liniment composed of equal parts of tinctura thebaica and liniment sapon. which has often prevented it. If this should not produce the desired effect, he informs us, that two or three tea-spoonfuls of syrup. e. mecon. given in the hot fit, will generally mitigate the symptoms. But for the entire removal of the disease, after purging with magnesia alba, he prescribes a drachm of the extract. cort. Peruvian. with a few drops of tinct. thebaic. in a clyster, to be repeated every three hours for a child of about a year old. When the stomach is oppressed with phlegm, the magnesia frequently occasions vomiting, which should be promoted with warm water. The constant heaviness of the head occasioned by those fevers in such tender constitutions is best relieved by the application of a blister to the back.

The bark has also proved effectual for the cure of intermittents in children, even when externally applied, by putting the powder of it into a quilted waistcoat. Of its efficacy in this way several instances are related by Dr Samuel Pye in the second volume of Medical Observations and Inquiries. In short, so effectual was the bark found in removing these fevers when properly applied, that of between four and five hundred afflicted with them in the year 1765, Dr Lind lost only two, neither of whom had taken this medicine.

In all these fevers, a vomit was administered whenever the patient complained of a sickness and reaching to vomit, or was seized with a spontaneous vomiting; and the bark was never given till this sickness was removed, or a purgative taken to clear more perfectly the whole alimentary canal. In those patients who were troubled with a cough, attended with a pain in the side affecting the breathing, when the pain was not relieved by warm fomentations, the balsamum anodynum, or by a blister, the Doctor generally ordered a few ounces of blood to be taken away, and endeavoured to stop the fever as soon as possible by the administration of the bark; having found that every return of the fever increased all such pains.—When the headach was very violent, and harassed the patient during the intermissions, the success of the bark was rendered more complete by the application of a blister to the back.—A giddiness of the head, which is the symptom most commonly remaining after even a slight intermitting fever, was generally relieved by the sal C. C. and the bark in wine. The former of these was administered in the following manner.

R. Aq. Alex. Simp. ℥vii.

Sal. C. C. 3ss.

Syr. e Cort. Aurant. ℥i. M. f. julep. Cap. cochlear. ij. subinde.

If from the continuance of the fever the patient was distressed with flatulence, a distension of the abdomen,

and a swelling of the legs, a spoonful of tinctura sacra, with the addition of 30 drops of the spirit lavend. compos. was ordered to be taken every night.—A continuance of the bark, a change of air, and the cold bath, were often found requisite to prevent a relapse.

Such is the method of cure recommended by this experienced author, who has also discovered the efficacy and success of opium in intermitting fevers. He informs us, that he has prescribed an opiate to upwards of 300 patients labouring under this disease; and he observed, that, if taken during the intermission, it had not the least effect either in preventing or mitigating the succeeding paroxysm: when given in the cold fit, it once or twice seemed to remove it; but when given half an hour after the commencement of the hot fit, it generally gave immediate relief.—When given in the hot fit, the effects of opium are as follow. 1. It shortens and abates the fit; and this with more certainty than an ounce of the bark is found to remove the disease. It generally gives a sensible relief to the head, takes off the burning heat of the fever, and occasions a profuse sweat. This sweat is attended with an agreeable softness of the skin, instead of the burning sensation which affects patients sweating in the hot fit, and is always much more copious than in those who have not taken opium. 3. It often produces a soft and refreshing sleep to a patient tortured in the agonies of the fever, from which he awakes bathed in sweat, and in a great measure free from all complaints.

The Doctor has always observed, that the effects of opium are more uniform and constant in intermitting fevers than in any other disease, and are then more quick and sensible than those of any other medicine. An opiate thus given soon after the commencement of the hot fit, by abating the violence and lessening the duration of the fever, preserves the constitution so entirely uninjured, that, since he used opium in agues, a dropsy or jaundice has seldom attacked any of his patients in those diseases. When opium did not immediately abate the symptoms of the fever, it never increased their violence. On the contrary, most patients reaped some benefit from an opiate given in the hot fit, and many of them bore a larger dose at that time than they could do at any other. The Doctor assures us, that even a delirium in the hot fit is not increased by opium, though opium will not remove it. Hence he thinks it probable, that many symptoms attending these fevers are spasmodic; but more especially the head-ach. However, if the patient be delirious in the fit, the administration of the opiate ought to be delayed until he recovers his senses, when it will be found greatly to relieve the weakness and faintness which commonly succeed the delirium. Dr Lind is of opinion, that opium in this disease is the best preparative for the bark; as it not only produces a complete intermission, in which case alone that remedy can be safely administered; but occasions such a salutary and copious evacuation by sweat, as generally to render a much less quantity of bark requisite. He commonly prescribes the opiate in about two ounces of tinctura sacra, when the patient is costive, who is to take the bark immediately after the fit. By these means the paroxysm is shortened, and the intestines are cleansed,

Febres

previous to the administration of the bark; as the opiate doth not prevent, but only somewhat retards, the operation of the purgative. When a vomit is given immediately before the paroxysm, the administration of the opiate should be postponed till the hot fit is begun.

In the administration of the Peruvian bark, care should be taken that it be of a good quality. And different opinions have been entertained with respect to the choice, even where there is no reason to believe that it has been adulterated by the mixture of other articles. For a long time, the preference was given to small quilled pieces of a pale coloured bark; but of late the red bark, which is generally in larger masses, of an apparently coarser texture, and evidently of a more resinous nature, has been highly celebrated by Dr Saunders and others. And in cases where it does not disagree with the stomach or excite looseness, it is admitted by the most accurate observers to be more powerful in preventing the return of intermittents. Whether the red bark be the product of a different species of the cinchona, or be obtained as well as the pale quilled bark from the cinchona officinalis, is not yet ascertained with sufficient accuracy.

A species of cinchona, distinguished by the title of *cinchona Jamaicensis*, has been discovered in Jamaica and other islands in the West Indies. A very accurate description of it has been given by Dr Wright of Jamaica in the Philosophical Transactions of London. The bark of this species also has been recommended in the cure of intermittents; but the advantages of it have not hitherto been sufficiently confirmed by experience. See CINCHONA and JESUITS Bark.

The barks of various trees readily cultivated in Britain, particularly different species of the salix, the prunus, the fraxinus, and the quercus, have by some been represented as no less efficacious than the Peruvian bark. But we may safely venture to assert, that although several of them may possess some power in stopping intermittents, yet that none hitherto tried can be considered as in any degree approaching to the cinchona in point of efficacy.

But although the Peruvian bark be the best cure for intermittents hitherto discovered, yet while it can by no means be represented as the only cure, it is very certain that other remedies have in different cases succeeded after the cinchona has failed. Cures have often been obtained by the use of different aromatics, bitters, and astringents. Many articles from the mineral kingdom also have been employed with advantage. And intermittents have unquestionably been in certain cases stopped by different preparations of iron, zine, copper, lead, and mercury. But of all the articles of this nature, arsenic has of late been the most celebrated. Arsenic is on good grounds conjectured to be the basis of an article much employed in the cure of intermittents in some of the countries where they are most prevalent, and sold under the title of the *tasteless ague drop*. The great success attending the use of this article, led Dr Fowler, an ingenious physician of Stafford, to examine it with particular attention. And in a treatise which he has lately published, entitled *Medical Reports* on the effects of arsenic in the cure of agues, he has given a formula for an arsenical solution, which he has found very successful in affec-

tions of this kind, and which is probably very nearly the same with the tasteless ague drop. Dr Fowler's mineral solution, as he styles it, is found by dissolving 64 grains of arsenic and as much fixed vegetable alkaline salt in a pound of distilled water. This solution is given in doses from three to 12 drops, varied according to the condition of the patient, and repeated two or three times a-day. And where the Peruvian bark has failed in stopping intermittents, it seems to be one of the most powerful remedies yet discovered. But after all remedies prove ineffectual, intermittents are often stopped by change of season and of situation.

But besides the remedies employed in tertian fevers and other intermittents, with the view of preventing the return of paroxysms, it is often also necessary to employ powerful articles with other intentions, particularly to mitigate and shorten the paroxysm when present; to obviate urgent symptoms, especially those of an inflammatory or putrid nature; and to obtain a complete apyrexia or intermission from fever after the paroxysm has ceased. With these intentions, recourse is not unfrequently had to emetics, laxatives, blood-letting, blisters, opium, diluents, or sudorifics, as the circumstances of the case may require.

The Irregular or Spurious TERTIAN.

Sp. I. var. 1. B.

Tertiana notha five spuria, Sauv. sp. 2. Sennert. Cleghorn. Hoffman.

The characteristic marks of this fever are, that its paroxysms last longer than 12 hours, and consequently it inclines more to the quotidian or continued fever than the former. Its paroxysms have no stated hour of attacking. The cure, however, is precisely the same with that above described, observing the proper cautions already mentioned with regard to the use of the bark.

The Double TERTIAN. Sp. I. var. 2. C.

Tertiana duplex, Sauv. sp. 13. Vog. G. 12. Sennert. Cleghorn.

Duplicata, Lin. 18.

The double tertian comes on every day; but differs from the quotidian in so far, that its paroxysms do not answer to each other singly, but alternately. The first day, for instance, the fit will come on in the forenoon, the second in the afternoon, the third in the forenoon, and the fourth in the afternoon.

Of these fevers we shall give the following description from Cleghorn's treatise on the diseases of Minorca: "They are called *double tertians* when there are two fits and two intervals within the time of each period. But commonly there is some difference between the two fits, either in respect of the hour they come at, the time of their duration, or the nature and violence of their concomitant symptoms. Some double tertians begin in this manner.—On the evening of Monday, for example, a slight fit comes on, and goes off early next morning; but on Tuesday, towards the middle of the day, a more severe paroxysm begins, and continues till night. Then there is an interval to Wednesday evening, when a slight fit commences a new period of the fever, which proceeds in the same manner as the first; so that (according to the way physicians calculate the days of diseases, by beginning

127

128

Febres to reckon from the first hour of their invasion), both paroxysms happen on the odd days; while the greatest part of the even days is calm and undisturbed. But in most double tertians the patient has a fit every day of the disease; the severe one commonly appearing at noon upon the odd days, the slight one towards evening on the even days; though sometimes the worst of the two fits happen on the even days.

"There is a tertian fever sometimes to be met with, during each period of which there are three different fits, and as many intervals. For example, towards Monday noon the patient is seized with a paroxysm, which declines about five or six o'clock the same evening: a few hours after, another fit begins, and continues until morning: from which time there is an interval to Tuesday evening, when a third fit comes on, and lasts most part of the night. On Wednesday there are again two paroxysms, as on Monday and on Thursday, like that of Tuesday; and thus the fever goes on with a double fit on each of the odd days, and a single fit on the even days.

"In double tertians, that interval is the most considerable which follows the severe fit; for the slight fit oftener ends in a remission than intermission, and frequently lingers till the other approaches: Hence it is, that the night preceding the vehement fit is much more restless than that which comes after it, as has been observed by Hippocrates. In double tertians, the vehement fit often comes on a little earlier in each period, while the slight fit returns at the same hour, or perhaps later and later every other day: so that the motions of one have no influence on those of the other; from whence it appears, that each of these fits hath its own proper independent causes."

129 *Duplicated TERTIAN.* Sp. I. var. 2. D.

Tertiana duplicata, Sauv. sp. 14. Jones. River.

This hath two fits on the same day, with an intermediate day on which there are none. This also does not differ in any remarkable particular from those already described.

130 *The Triple TERTIAN.* Sp. I. var. 2. E.

Tertiana triplex, Sauv. sp. 15. Cleghorn.

Semitertiana, Hoffman.

Semitertiana primi ordinis, Spig.

This differs from the former in having a single and double fit alternately: thus, for instance, if there are two fits the first day, there is only one the second, two the third, one the fourth, &c. Its cure the same as before.

131 *The Semi-TERTIAN.* Sp. I. var. 2. F.

Hemitritæus, Celf.

Semitertiana, Cleghorn.

Semitertiana secundi ordinis, Spig.

Amphimerina hemitritæus, Sauv. sp. 8.

Amphimerina pseudo hemitritæus, Sauv. sp. 9.

The semitertian is described by Dr Cullen as having only an evident remission between its paroxysms; more remarkable between the odd and even day, but less so between the even and odd one. For this reason, he adds, that possibly some semitertians ought rather to be classed among the remittents; and owns that it is difficult to settle the boundaries between them. But Cleghorn, whom he quotes, describes it in the follow-

ing manner. "A fit begins on Monday noon, for example, and goes off the same night. On Tuesday afternoon a second fit comes on, and gradually increases till Wednesday night, when it terminates. On Thursday morning there is such another interval as happened on Tuesday morning: But on Thursday afternoon another long fit like the preceding commences; and returning regularly every other day, leaves only a short interval of ten or twelve hours during the eight and forty.

Concerning the cure of these fevers Dr Cullen observes, that though no entire apyrexia occurs, the bark may be given during the remissions; and it should be given even though the remissions be inconsiderable; if, from the known nature of the epidemic, intermissions or considerable remissions are not to be expected, and that great danger is apprehended from repeated exacerbations.

The Sleepy TERTIAN. Sp. I. var. 3. G.

Tertiana carotica, Sauv. sp. 10. Werlhof.

Tertiana hemiplegica, Sauv. sp. 20. Werlhof.

Quotidiana soporosa, Sauv. sp. 8. Car. Pis.

Febris caput impetens, Sydenham, ep. ad R. Brady.

This, according to Vogel, is a most dangerous species, and very commonly fatal; for which reason he ranks it among those intermittents which he calls *malignant*. Sometimes he tells us the alarming symptom of a sleepiness comes on, not at the beginning of the disease, but will unexpectedly occur during the third, fourth, fifth, or sixth paroxysm. It commonly begins with the cold fit, and continues during the whole time of the paroxysm, and, becoming stronger at every succeeding one, at last terminates in a mortal apoplexy. Sometimes fevers of this kind rage epidemically. Vogel relates, that he saw a simple tertian changed into one of these dangerous fevers. The patient was a woman of a delicate constitution, and the symptom appeared in consequence of her being put in a violent passion: however, it occurred but once, and she recovered. Hoffman mentions a carus in a double tertian occurring seven times without proving mortal; the Vogel says, that the powers of nature are very seldom sufficient to conquer the disease.

In 1678, Dr Sydenham tells us that intermittents raged epidemically at London, where none had appeared before from 1664. Of them "it is to be noted (says he), that though quartans were most frequent formerly, yet now tertians or quotidians were most common, unless the latter be intitled double tertians; and likewise, that though these tertians sometimes began with chillness and shivering, which were succeeded first by heat, and soon after by sweat, and ended at length in a perfect intermission, returning again after a fixed time, yet they did not keep this order after the third or fourth fit, especially if the patient was confined to his bed and used hot cardiacs, which increase the disease. But afterwards this fever became so unusually violent, that only a remission happened in the place of an intermission; and approaching every day nearer the species of continued fevers, it seized the head, and proved fatal to abundance of persons."

From this description of Sydenham's we may have an idea of the nature of the disease. As to its cure,

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Febriles

he strongly recommends the bark; telling us, that, even in the *most continued* kind of intermittents, "the nearer the intermittent approaches to a continued fever, either spontaneously, or from using too hot a regimen, so much the more necessary is it to exhibit a larger quantity of the bark; and that he took advantage of a remission, though ever so small.

433

The *Spasmodic* or *Convulsive* TERTIAN. Sp. I. var. 3. H.

Tertiana asthmatica, *Sauv.* sp. 6. *Bonet.*

Tertiana hysterica, *Sauv.* sp. 8. *Wedel. A. N. C.* Dec. I. A. II. obs. 193.

Hysteria febricosa, *Sauv.* G. 135. sp. 8. *A. N. C.* Dec. I. Ann. II.

Tertiana epileptica, *Sauv.* sp. 16. *Calder. Lautt.*

Quotidiana epileptica, *Sauv.* sp. 3. *Edinb. Essays*, vol. 5. art. 49.

Ecclampsia febricosa, *Sauv.* G. 133. sp. 17.

Epilepsia febricosa, *Sauv.* G. 134. sp. 9.

Tertiana tetanodes *Medici* Beobacht. I. Band.

Tetanus febricosus, *Sauv.* G. 122. sp. 10. *Stork*, Ann. Med. II.

Tertians of this kind occur with very different symptoms from those of the true ones, and sometimes even with those which are very extraordinary. In some they are attended with symptoms of asthma, in others with those of hysterics, in others with convulsions. Where the symptoms of asthma occur, the disease must be treated with diuretics and antispasmodics joined with the bark. In the hysterical asthma the fit comes on with cold, yawning, cardialgia, terror and dejection of mind. The disease is to be removed by mild aperients and antihysterics joined with the bark.

Of the convulsive tertian we have a most remarkable instance in the *Edinburgh Medical Essays*, Vol. V. The patient was a farmer's son about 26 years of age, of a strong plethoric habit of body. He had laboured under an ague half a-year, and had taken a great deal of bark. While he was telling his case to the surgeon (Mr Baine of Pembroke), he was suddenly taken with a violent stamping of his feet; and the convulsions gradually ascended from the soles of the feet to his legs, thighs, belly, back, and shoulders. His head was then most violently convulsed, with a total deprivation of speech; but he had a most dismal vociferation, that might have been heard at a considerable distance, his abdomen and thorax working and heaving violently and unusually in the mean time. This fit having lasted half an hour, a profuse sweat broke out over all his body, which relieved him; and he then became capable of answering such questions as were put. These extraordinary fits, he said, had been occasioned by a fright, and his neighbours had concluded that he was bewitched. They returned sometimes twice a-day, and always at the times the ague used to return. During the paroxysm his pulse was very high and quick, his face much inflamed, and his eyes ready to start out of his head. After the fit was over, he complained of a most torturing pain of the bowels. His tongue was generally moist, and he had a suppression of urine.—This formidable disease, however, was totally subdued by the use of the bark, mercurials, antispasmodics, opiates, and saline draughts.

The *Eruptive* TERTIAN. Sp. I. var. 3. I.

Tertiana petechialis, *Sauv.* sp. 3. *Donat. Lautt.*

Tertiana scorbutica, *Wedel. A. N. C.* Dec. I. A. II. obs. 193.

Tertiana urticata, *Sauv.* sp. 22. *Planchon. Journ. de Med.* 1765. *Cleghorn.*

Tertiana miliaris, *Sauv.* sp. 21. *Walthier.*

This species of tertian is accompanied with red or livid blotches on the skin, or an eruption like that occasioned by the stinging of nettles. In the latter case Dr Cleghorn says the disease is very dangerous; and as the former indicates an incipient dissolution and putrefaction of the blood, it must also be reckoned of very dangerous tendency.

The *Inflammatory* TERTIAN. Sp. I. var. 3. K.

Tertiana pleuritica, *Sauv.* sp. 4. *Vales. Lautt.*

Pleuritis periodica, *Sauv.* G. 103. sp. 14.

Tertiana arthritica, *Sauv.* sp. 5. *Morton. Lautt.*

Sauvages inform us, that he has seen a true and genuine pleurisy having all the pathognomic signs of the disease, but assuming the form of an intermittent; that is, the patient is one day affected with the pleurisy, and the next seemingly in perfect health. He also tells us, that in the month of May 1760 a tertian raged epidemically, which after the third fit imitated a pleurisy, the pain of the side and difficulty of breathing coming regularly on, and the fever from an intermittent becoming remittent; the blood had also the same appearance with that of pleuritic persons, and the distemper yielded to bleeding and gentle cathartics.—Morton also informs us, that he has observed similar disorders an hundred times over, which were always certainly and safely cured by the Peruvian bark.

The TERTIAN complicated with other Disorders.

Sp. I. var. 4.

Tertiana scorbutica, *Sauv.* sp. 9. *Etmuller. Timaeus.*

Tertiana syphilitica, *Sauv.* sp. 17. *Deidier.*

Tertiana verminosa, *Sauv.* sp. 18. *Stiffer. in act.*

Helmstad. Lancis. de noxis palud. Pringle.

Ramazzini. Van den Bosch. de const. vermin.

The scorbutic tertian, according to Sauvages, is exceedingly anomalous, its periods being sometimes much anticipated, and sometimes much postponed. It is exceedingly obstinate, and will return if the body be not cleared of its scorbutic taint. The patient is affected with lancinating pains of a wandering nature. The urine lets fall a dusky red sediment, or a thick branny matter is copiously scattered up and down in it, seemingly tinged with blood. The usual symptoms of scurvy, viz. livid spots, and rotten fetid gums, also frequently occur. For this the Peruvian bark is very useful, both as a febrifuge and antiscorbutic.

A tertian accompanied with worms is taken notice of by Sir John Pringle in his treatise on the diseases of the army. The worms, he tells us, were of the round kind; and though we are by no means to reckon them the cause of the fever, they never failed to make it worse, occasioning obstinate gripings or sickness at stomach. In these cases stitches were frequent; but, being flatulent, were not often relieved by bleeding. The worms were discharged by vomiting

Tertiana.

134

135

136

Febres as well as by stool. For discharging these worms, he commonly gave half a drachm of rhubarb with 12 grains of calomel; without observing any inconvenience from such a large dose of mercury. Anthelmintics, which act slowly, had little chance of doing good; for though worms will sometimes lie long in the bowels without giving much uneasiness to a person otherwise well, yet in a fever, especially one of a putrid kind (to which his intermittents always seemed to incline), the worms being disturbed by the increase of heat, and the corruption of the humours in the *primæ viæ*, begin to move about, and struggle to get out. Lancisus, who makes this remark, adds, that upon opening the bodies of some who had died at Rome of fevers of this kind, wounds were found in the intestines made by the biting of the worms; nay, that some of them had even pierced through the coats of the guts, and lay in the cavity of the abdomen. Pringle never had any instance of this; but knew many cases in which the worms escaped by the patient's mouth, though there had been no previous retching to bring them up. One soldier was thrown into violent convulsions, but was cured by the above-mentioned powder.

137. The TERTIAN varied from its Origin. Sp. I. var. 5.

Tertiana accidentalis, *Sauv.* Sp. 12. *Sydenham.*

Tertiana a scabie, *Sauv.* Sp. 12. *Juncker*, tab. 80. *Hoffman*, II. p. 12.

The existence of fevers of this kind, as we have already observed, is denied by Dr. Cullen; the accidental fever of Sauvages was said to arise from any slight error in the non-naturals, and consequently was very easily cured. That which arose from the repulsion of the itch, was cured as soon as the eruption returned.

138
Remittent
Tertian.

The TERTIAN with only a remission between the fits. Sp. II.

Tritæophya, *Sauv.* Gen. 85. *Sag.* p. 695.

Tritæus, *Lin.* 21.

Hemitritæa, *Lin.* 23.

Tertianæ remittentes et continuæ Auctorum.

Tertianæ subintrantes, proportionatæ, subcontinuæ, *Torti.*

Tertiana subcontinua, *Sauv.* Sp. 19.

Quotidiana deceptiva, *Sauv.* Sp. 2.

Amphimerina semiquintana, *Sauv.* Sp. 24.

Tritæophya deceptiva, *Sauv.* Sp. 10.

Causos *Hippocratis.*

Tritæophya causus, *Sauv.* Sp. 2.

Febris ardens *Boerhaavii*, aph. 738?

Tertiana perniciofa, quæ simulata tertiani circuitus effigie lethalis, et mille accidentibus periculosis, mis implicata, existit. *Lud. Mercatus.*

Tertiana pestilens, *P. Sal. Diversus.*

Tertiana maligna pestilens, *Riverii.*

Morbus Hungaricus. *Lang. Lemb. Sennert. Jordan.*

Languor Pannonicus, *Cober.*

Amphimerina Hungarica, *Sauv.* Sp. 10.

Hemitritæus pestilens, *Schenck. ex Corn. Gamma.*

Febres pestilentes Ægyptiorum, *Alpin.*

Febris tertiana epidemia, *Bartholin.*

Febres epidemicæ, autumnæ 1657 et 1658, *Willis.*

Febris synches epidemica, ab anno 1658 ad 1664. et postea ab anno 1673 ad 1691, *Morton.*

Febres autumnales incipientes, *Sydenham.*

Affectus epidemicus Leidensis, *Fr. Sylvii.*

Morbus epidemicus Leidensis, 1669, *Fanois.*

Tertianæ perniciofæ et pestilentes, et febres castrenses epidemicæ, *Lancisi.*

Febres intermittentes anomalæ et mali moris, *Hoffman.*

Febris cholericæ minus acuta, *Hoffman.*

Febris epidemica Leidensis, anno 1719, *Koker apud Haller*, Disp. tom. V.

Amphimerina paludosa, *Sauv.* Sp. 19.

Febris paludum, *Pringle.*

Bononiensis constitutio hiemalis 1729, *Beccari in A. N. C.* Vol. III.

Amphimerina biliosa, *Sauv.* Sp. 22.

Febris castrensis, *Pringle.*

Febris putrida epidemica, *Huxham de aëre ad ann.* 1729.

Febris biliosa Lausanensis, *Tissot.*

Tritæophya Wratislaviensis, *Sauv.* Sp. 3. *Hahn.* Epidemia verna Wratislav. in App. ad. A. N. C. Vol. X.

Tritæophya Americana, *Sauv.* Sp. 12.

Febris anomala Batava, *Grainger.*

Morbus Naronianus, *Pujati.*

Febris continua remittens, *Hillary's diseases of Barbadoes.*

Febris remittens Indiæ orientalis, *Lind. diff. inaug.* 1768.

Febris critica et febr. biliosa æstatis, *Roupe.*

Febris remittens regionum calidarum, *Lind* on the diseases of hot climates.

A. Tertiana cholericæ five dysentericæ, *Tort. Therap. Special. lib. iii. cap. 1. Lautter. Hist. Med. cas. 6. 16. 17. 20. Morton, App. ad Exerc. II.*

B. Tertiana subcruenta five atrabilaris, *Tort. ibid.* Never seen by *Cleghorn.*

C. Tertiana cardiaca, *Tort. ibid. Lautter, Hist. Med. cas. 15. 15. 23.*

Amphimerina cardiaca, *Sauv.* Sp. 5.

Tritæophya affodes, *Sauv.* Sp. 6.

Febris continua affodes, *Vog. 27.*

D. Tertiana diaphoretica, *Tort. ibid.*

Tritæophya typhodes, *Sauv.* Sp. 4.

Tritæophya elodes, *Sauv.* Sp. 5.

Febris continua elodes, *Vog. 21.*

E. Tertiana syncopalis, *Tort. ibid. Lautter. cas. 11. 12. 13. 15. 16.*

Tritæophya syncopalis, *Sauv.* Sp. 1.

Amphimerina syncopalis, *Sauv.* Sp. 4.

Amphimerina humorosa, *Sauv.* Sp. 6.

Febris continua syncopalis, *Vog. 29.*

F. Tertiana algida, *Tort. ibid. Lautter, cas. 13.*

Amphimerina epiala, *Sauv.* Sp. 3.

Amphimerina phricodes, *Sauv.* Sp. 7.

Tritæophya leipyria, *Sauv.* Sp. 9.

Tertiana leipyria, *Sauv.* Sp. 23. *Valcarengi Med. Ration. p. 18.*

Febris continua epiala et leipyria, *Vog. 19. et 24.*

G. Tertiana lethargica, *Tort. ib.*

Tritæophya carotica, *Sauv.* Sp. 7. *Lautter, 1. 7. 14. Tertiana.*

Febres

Tertiana apoplectica, *Morton*. Exerc. I. cap. ix. hist. 25.

Tertiana soporosa, *Werlhof*. de febr. p. 6.

Febris epidemica Urbevetana, *Lancif.* de noxis pal. effluv. I. II. c. 3.

The remittent fevers are much more dangerous than the true intermittents, as being generally attended with much greater debility of the nervous system and tendency to putrescency in the fluids than the latter. Sauvages divides his *tritæophya*, a remittent tertian, into the following species.

139

1. *Tritæophya syncopalis*, or that attended with fainting. It begins like a tertian, with cold succeeded by heat and profuse sweating; but attended with much more dangerous symptoms, such as cardialgia, enormous vomiting, great weakness, small contracted pulse, coldness of the extremities, and, unless timely assistance be given, kills during the second or third paroxysm.

140

2. The *causus*, or burning fever of Hippocrates, returns every third day without any new sensation of cold; and is attended with great thirst, heat, but without diarrhœa or sweat, and continues only for one week or two at the utmost. It attacks chiefly young people of a robust and bilious habit of body, who have been accustomed to much exercise, and exposed to the sun during the heats of summer, and have also used a phlogistic regimen. The tongue is dry, sometimes black; the urine of a red or flame colour; together with pain of the head, anxiety, and sometimes other symptoms still more dangerous.

141

3. *Tritæophya Vratislaviensis*, was a pestilential disease occasioned by famine, during which the people fed on putrid aliments: the air was infected by the vast numbers of bodies of those slain in battle, and the inhabitants were also dejected by reason of being deprived of their harvest, and other calamities; to all which was added the continuance of a calm in the atmosphere for a long time. It began with an acute fever, leipyrria or coldness of the external parts and sensation of burning heat inwardly; general weakness; pain of the head and præcordia; serous or bilious diarrhœa; a delirium, in some furious, and accompanied with a dread of being exposed to the air; on the second day the thirst was violent, attended with a bilious vomiting as well as diarrhœa, tough viscid spitting, fainting, burning heat in the bowels, the tongue dry and seeming as if burnt with a hot iron, a suppression of the voice, anxiety, stupor; after which quickly followed convulsions and death. In some fevers a leipyrria came on with an exceeding great cold of the extremities, presently followed by an intolerable heat of the viscera, with symptomatic sweats, violent diarrhœa, followed by a very itchy miliary eruption. On the fourth day came on copious sweats, spasms of the lower jaw, nausea, involuntary passing of urine, slight delirium, a flux of ichorous matter from the nostrils, an exceeding tough spitting, an epilepsy, and death. Professor Hahn, who gives the history of this disease, was himself attacked by it, and suffered in the following manner. On the first day was a violent feverish paroxysm without rigor, a sharp pain in the occiput, and immediately an inflammatory pain over the whole head; the feet were extremely cold, and the extremities rigid with spasms. The pain continued to increase daily to such a degree, that the

Nº 203.

contact of the air itself became at last intolerable; a dejection of mind and incredible weakness followed; he passed restless nights with continual sweating, heavy and pained eyes, and an universal sensation of rheumatism over the whole body. On the third day the pains were assuaged, but he had a very bad night. On the fourth day all the symptoms were worse, the feet quite chilled, the hands very red and agitated with convulsive motions; he was terrified with apprehensions of death, and had a vomiting every now and then: this day sponges dipped in cold water were applied over the whole body, and he used cold water for his drink. On the eighth day the pulse was convulsive; and the pains were so violent, that they made him cry out almost continually. On the ninth day he was delirious, and threw up some grumous blood. On the 11th his pulse was more quiet, and he had a sweat; a decoction of the bark was given: his voice was broken, his speech interrupted, and his teeth chattered upon one another. On the 12th his jaw was convulsed, he had a risus sardonius, and deafness; after which, the paroxysms returned less frequently, and only towards night. On the 14th he had a chilling cold over the whole body, a cold sweat; frequent lotions were applied, and all the symptoms became milder. On the 18th he had a quick delirium, but fainted as soon as taken out of bed; a sensation of hunger, followed by copious sweats; profound sleep; an aversion from noise; every thing appeared new and extraordinary. On the 36th a cholera; on the 48th a scaling off of the skin, and falling off of the nails. This epidemic carried off above 3000 people at Warsaw. Frequent lotion of the body either cold or tepid, watery glysters, and the copious introduction of watery fluids under the form of drink, were of service. But the most favourable crisis was under the form of some cutaneous eruption.

4. *Tritæophya typhodes*. The principal symptom of this fever was a continual sweat with which the patients were almost always wet; with paroxysms returning every third day. Sauvages tells us, that he had twice an opportunity of observing this fever; one was in the teacher of an academy, about 40 years of age, and of a melancholic temperament. He sweated every other night so plentifully, that he was obliged to change his linen nine times; and even on the intermediate days was never perfectly free of fever, and had his skin moistened with sweat. The other was of a woman who went about in man's clothes, and was discovered only after her death. The disease began with a slight sensation of cold, after which she sweated for eight hours. It was attended with the highest debility, anxiety, and at the same time an insatiable hunger.

5. *Tritæophya elodes*, was an inflammatory epidemic, but not contagious, terminating about the 14th or 21st day. The disease came on in the night-time, with disturbed rest, universal weakness, watchings, great heat and sweat, redness of the face and almost of the whole body, sparkling eyes, the tongue dry and white; a hard, tense, and turgid pulse: about the third day a kind of frenzy frequently came on with the feverish paroxysm, the forerunner of an universal miliary eruption; or, what was worse, with purple spots so close together, that they looked like an erysipelas of

142

143

Febres

of the whole body. Sometimes blisters of the size of small pearls, filled with acrid serum, appeared on the neck, armpits, and trunk of the body, which were of all others the most dangerous. There was a variety of the disease, which our author calls the *humoralis*, and in which the pulse was soft and feeble, with greater weakness over the whole body, and the disposition to sleep more frequent than in the other; the eyes languid; the tongue very white, but not dry; and worms were discharged.

144

6. *Tritæophya affodes*. This species arose from a foulness of the primæ viæ, and the effluvia of waters in which hemp had been steeped. It began with rigor, followed by great heats, restlessness, tossing of the limbs, terrible faintings, immoderate thirst, dryness of tongue, delirium, and at length excessive watchings; these last, however, were less dangerous than vertigoes or comatose dispositions, which brought on convulsions or apoplexies.

145

7. *Tritæophya carotica*. This had exacerbations every other evening; and its distinguishing symptom was an excessive inclination to sleep, preceded by a severe headach, and followed by delirium, and sometimes convulsions; the tongue was black, and the patient insensible of thirst after the delirium came on. In those cases where the disease proved fatal, a subul-tus tendinum and other grievous symptoms came on.

146

9. *Tritæophya leipyrria* is only a variety of the *tritæophya causus*, already described.

147

10. *Tritæophya deceptiva*. This species at first assumes the appearance of a continued fever; but afterwards degenerates into a remittent, or even an intermittent. It is described by Sydenham, but attended with no remarkable symptoms.

148

11. The last of Sauvages's species of *Tritæophya* belonging to the remitting tertian is the *Americana*. This, according to Sauvages, is the ardent fever with which the Europeans are usually seized on their first coming to America, and generally carries off one half of them. Of this there are two varieties, the *very acute* and the *acute*. The *very acute* ends before the seventh day. It comes on a few days after the person's arrival, with loss of appetite, with dyspnœa and sighing from weakness, head-ach, lassitude, pain of the loins: a pyrexia succeeds, with great thirst, sweat, and heat; the sickness increases, nausea comes on, with vomiting of porraceous bile; the tongue rough, the extremities often cold; watching, furious delirium; and the patient frequently dies on the third day. Copious sweats, and a plentiful hemorrhagy from the nose on the fifth day, but not sooner, are serviceable; but a bilious diarrhœa is the best crisis of all.

The *acute* kind terminates most frequently on the ninth, but very rarely goes beyond the fifteenth day. Death frequently comes on between the fourth and seventh days. It begins with head-ach, pain in the loins, and sometimes shivering; great lassitude, dyspnœa, thirst; burning fever, increasing every third day; inflation of the abdomen, pain at the pit of the stomach, nausea, and bilious vomiting. Such is the state of the disease within twenty-four hours. The eyes are red, and full of tears; the urine pellucid; there is a low delirium, and continual anxiety; the tongue is dry and red, and sometimes, though rarely, black, which is a still worse sign; the pulse, formerly strong and

VOL. XI. Part I.

full, sinks about the fourth day, and becomes tense and spasmodic: if a carus then comes on, the patient dies the fifth or sixth day; but if the pulse keeps up, and no carus comes on, a crisis is to be expected by sweat, by a copious hemorrhagy from the nose, or, which is still more safe, by a bilious diarrhœa, which is never salutary if it comes on before the fifth day.

To the remitting tertian also belong the following species mentioned by Sauvages, viz.

1. *Tertiana subcontinua*. This begins like a genuine tertian, and at first hath distinct paroxysms; but these grow gradually more and more obscure, the disease acquiring daily more of the appearance of continued fever, by which it is to be distinguished from the other varieties of this species. It is not unfrequently joined with those symptoms which attend the fatal fever already mentioned; as cardialgia, cholera, syncope, &c. but in a much less degree. The disease commonly begins with little or no sense of cold, but rather a sensation of heat; when the tertian is doubled, it has first a slighter and then a more severe fit; and thus goes on with an exacerbation on the even days: and though it should change from a double into a single tertian, we are still to suspect it, if a weak fit is the forerunner of a very strong one. This change of the tertian into a continued fever is also to be prognosticated if a heat remarkable to the touch is perceived on the day of intermission, together with some disturbance of the pulse, thirst, and dryness of the tongue; all of which show an universal tendency to inflammation: the same is foretold by the urine being in small quantity, and very red, or of a saffron colour; also an ulcerous or aphthous inflammation of the throat, with difficulty of swallowing, or any very severe symptom coming on in the beginning of the disease, excepting only a delirium, which is easily removed.

2. *Quotidiana deceptiva*. This is a disorder of an inflammatory kind, with a strong tendency to putrefecency, and sometimes assumes the form of a quotidian. In it the patient frequently complains of cold when he really is hot, and the remission is very indistinct; and the disease is known by the great languor of the patient and the foulness of his tongue.

3. *Amphimerina cardiaca* is an acute malignant fever, with daily exacerbations, attended with fainting and vomiting of green bile. Afterwards, the weakness increasing, the patient's extremities grow cold, and a profuse sweat comes on, which is frequently succeeded by death on the fourth day. Another species resembling this Sauvages calls the *syncopalis*; but the *cardiaca* differs from it in being attended with cardialgia.

4. *Amphimerina paludosa*. This is the fever described by the British physicians under many different names, and appearing under various forms, according to the different constitutions of the patients. This fever in the East Indies, according to Dr Lind of Windsor, generally comes on suddenly, and begins with a sense of debility and a very great lowness of spirits. These symptoms are attended with a greater or less degree of chilliness, a dizziness, a nausea, very acute pains in the head and loins, and a trembling of the hands; the countenance is pale, the skin commonly very dry and corrugated, the eyes dull and heavy, the pulse quick and small, the breath generally difficult, and interrupted with hiccough.

P

As

Tertiana.

149

150

151

152

Febres

Tertiana.

As the paroxysm increases, the chilliness now and then gives way to irregular heats, which soon become violent and permanent; the nausea likewise increases; and in some there comes on a vomiting, in which they throw up a great deal of bile. Sometimes bile is likewise voided by stool. The skin grows red; the eyes small, and sometimes not a little inflamed. The pulse becomes fuller, and the breath more difficult, attended with great restlessness and a troublesome thirst; notwithstanding which (so great is the nausea) the patient cannot endure any kind of liquids. The tongue becomes foul, and the pain of the head and loins more violent; a delirium then follows; a slight moisture appears on the face, and from thence spreads to the other parts; whilst the violence of the other symptoms abates, and shows the beginning of a remission, which is completed by plentiful sweats.

On the fever's remitting, the pulse returns almost to its natural state; the pains of the head and loins still continue, though somewhat less violent, as likewise the nausea and want of appetite. When the disease gains strength, the remission is scarcely obvious, and is immediately followed by another paroxysm; which begins, not indeed with so great a shivering, but is attended with a greater pain of the head, the greatest anxiety, a heartburn, nausea, vomiting, and bilious stools. The matter most commonly evacuated by vomit and stool is whitish like chalk and water, or curdled milk which is vomited by sucking children, when the curd is much broke down. A heat, immoderate thirst, and delirium, now come on. The tongue becomes more foul; the teeth and inside of the lips are covered with a black crust; the breath grows hot and fetid: another remission ensues, attended with a sweat; but this remission is both shorter and less obvious than the first.

This second remission is succeeded by a paroxysm, in which the symptoms are far more violent than in the former; that which the patient discharges by vomiting and purging is more fetid; the mouth, teeth, and inside of the lips, are not only covered with a black crust, but the tongue becomes so dry and stiff, that the patient's voice can scarce be heard. Violent delirium, with restlessness and anxiety, come on chiefly during the paroxysm; nor do these symptoms abate till the fever remits, and the patient sweats.

When the fever becomes so violent, during the third fit, as to end in death, which is generally the case, some of the sick have a coma; in others the delirium becomes more violent. The discharges now become more fetid, and have a cadaverous smell; the stools are involuntary; the pulse is so quick, small, and irregular, that it is scarce to be counted, or even felt; a cold sweat is diffused over the whole body, especially the head and neck: the face becomes Hippocratic and convulsed; the patient picks the bed-clothes; a subultus tendinum comes on; the sick lie constantly on their backs, and insensibly slide down to the foot of the bed; their extremities grow cold; they are then seized with convulsions, with which the scene closes.

In this fever, the urine, which at the beginning is pale, becomes of a deeper colour by degrees, but without depositing any sediment. There seldom or never appear any petechiæ, and the prickly heat

which was before on the skin vanishes on the first appearance of the fever. But though these were the general symptoms of this disorder, they varied in the different subjects, and at different seasons of the same year. The pulse, for example, in some, was quick in the beginning of the disorder; in others, it varied with the other symptoms. The skin was generally dry in the beginning of the fit; but in some it was moist, and covered with sweat from the very first beginning of the disease. In the month of September, when the disorder raged most, the remissions were very imperfect and obscure; but, on the return of winter and the healthy season, they became more regular, and the disease assumed the appearance of an intermitting fever, to such a degree as at length not to be distinguished from it. In some the remissions could scarce be perceived, and the fever continued for two weeks without any material change for the better or the worse. At this time numbers were seized with it. When the disorder continued for any time without a change, it generally ended in death; while the weather grew better, it sometimes, in the space of a few days, from a common fever became an intermitting one, and the patient recovered, unless his liver, which was sometimes the case, happened to be affected. The cure of an inflammation of the liver proved uncertain and tedious; as it was commonly followed by a colliquative diarrhœa, which generally endangered the patient's life.—Every succeeding paroxysm was observed to be more dangerous than the preceding; the third generally proved fatal; some died during the first. When this happened, the fever, in the language of the country, was called a *puca*, that is a strong fever.

This disease, according to Dr Lind of Haslar hospital, is the autumnal fever of all hot countries, the epidemic disease between the tropics, and the disease most fatal to Europeans in all hot and unhealthy climates. All authors agree that intermittents in general, but particularly this dangerous kind of them, are produced by heat and moisture. Dr Lind of Windsor remarks, that the European seamen are very subject to the fever above mentioned when they happen to arrive at Bengal in autumn. They are predisposed to it from the nature of their food, their confinement on board, the very great heats to which they are exposed during the voyage, and their lying for hours together exposed to the night colds.

Most of the meat used by the crews of those ships is salted, and often in a putrid state, without any fresh vegetables, they having only biscuits, and some other farinaceous matters. The quantity of the vinous or spirituous liquors allowed them is by far too small to subdue the putrescent disposition of their animal-food. Their fluids consequently become, from day to day, more and more putrescent, and of course the more apt to breed and contract this disorder. This disposition is likewise induced by their being stowed very close together, and that for a considerable length of time, and in a foul air, especially when the weather happens to be too stormy to permit the hatches and port-holes to be kept open.

Though the heats they endure in the voyage to India are less considerable than those of the country itself, yet they are too much for an European constitution to

Febres to bear. The general heat at sea within the tropics is about 84° of Fahrenheit's thermometer, which is sufficient to relax them, and promote a corruption of their humours, especially when it coincides with the above causes. It likewise creates a languor and indolence, which alone are sufficient to increase that putrescence. These causes are apt to be considerably aggravated by the men being often exposed, when on duty, for hours together, to rain, damp, and cold air; a circumstance which frequently happens to them when working their ships up the river Ganges in the night-time. Hence the perspiration is checked, and the excrementitious fluid which used to be discharged by the skin being retained in the body, contributes, he thinks, very much towards the predisposition to this disease.

But the most powerful of all the remote causes is justly thought to be the effluvia of marshes replete with putrid animal-substances. We have not, however, been able to determine from what kind of putrid animal-substances these effluvia derive their virus. For that every kind of putrefaction has not such an effect appears from this, that neither practical anatomists, nor those who by their trades are exposed to the putrid effluvia of animals, for instance such tanners and butchers as keep their shops and stalls very dirty, are more subject than others to putrid diseases. Nor are the ship-stewards and their servants, whose business it is to deliver out their provisions to the ships crews, and who spend the most of their time amongst the putrid and rancid effluvia of the places in which those provisions are kept, more subject to putrid fevers than their ship-mates. But whatever be in this, we are well assured that some particular putrid fermentations produce noxious vapours, which, united with those of marshes, render them more pernicious. Hence evidently proceeds the extreme unhealthfulness of a place called *Culpi*, on the eastern bank of the Ganges. The shores about it are full of mud, and the banks covered with trees. Opposite to the place where the ships lie there is a creek, and about a mile from its entrance stands the town of *Culpi*: the ships lie about a mile from the shore. None of the sailors on board the ships stationed at this place enjoyed their health. The burying ground also contributed not a little to spread the infection. The ground being marshy, the putrid water flowed from the old graves into the new ones, which infected the grave-diggers and those that attended the funerals; and from this cause many were suddenly seized while they were performing the last duty to their companions. This place has ever been remarkable for the unhealthfulness of its air. It was once customary to send some of the Company's servants here to receive the cargoes of the ships, and send them to Calcutta; but so many of them died on this duty, that the Company was at length obliged to dispense with it.

Hence it plainly appears, how apt putrid animal and vegetable substances are to render the effluvia of fenny places more pernicious than they would otherwise be. The reason why great inundations of the Nile and Ganges are followed by a healthy season is, that by this means the putrid animal and vegetable substances dispersed over the contiguous countries are carried off into the sea—The noxious vapours arising from fens spread but a little way. Dr Lind has often known ships crews at a very little distance from the

shore quite free from this disorder. But although these marsh miasmata first bring on the disease, yet contagion particularly spreads it, and renders it more epidemic. Thus the *Drake* East Indiaman continued free from the disorder for two weeks together, when she had no communication with the other ships; whereas, as soon as the disorder was brought on board, many were seized with it within a few days in such a manner as to leave no room to entertain the least doubt concerning its pestilential nature.

Dr Lind of Haslar hospital has given a very curious and learned account of the appearance of this fever throughout the various parts of the globe. It was very common in England in the years 1765 and 1766, one obvious cause of which was the prevalence of the eastern wind. This wind in England is often said to bring with it a fog from the sea; but the truth of the matter is, that in many places of this island the east-wind frequently raises a copious vapour from water, mud, and all marshy or damp places. To this exhaling quality of the eastern wind Dr Lind has often been an eye-witness. When the wind changes to the east, the mud sometimes sends up a vapour as thick as smoke; and the doctor has observed two fish-ponds in his neighbourhood, one of fresh and the other of salt water, which on the approach of an easterly wind sometimes also emit a dense vapour, as from a pot of boiling water. In order to view this phenomenon distinctly, the person should stand at about 100 yards distance from the mud or ponds. If the sun shines when the wind changes to the east, he will observe a constant steam of vapours arising out of the ponds, from about five to ten yards in height, while the air about him remains serene. As the vapour or fog arising from other bodies glides along the surface of the earth, and is brought by the easterly wind to the ponds, he will still be able, for some time, to distinguish the vapours ascending perpendicularly out of the ponds from those which are carried in an horizontal direction by the wind; especially if the sun continues to shine, though faintly.

This evaporating quality of the east-wind seems to manifest itself also by its effects both on the thermometer and the human body; for a thermometer hung over a damp piece of ground during the fogs or exhalations arising from it, will often indicate a degree of cold below the freezing point. The chilliness of the body, so sensibly perceived when in this situation, seems to proceed from the same cause, and to produce nearly the same sensations, which the damp arising from the wet floor in a chamber communicates to those who happen to be in it.

Winds are not constant in their effects. As we have sometimes warm weather with a north-wind, and sometimes very little heat with one blowing from the south; so the fogs attending an east-wind are not constant, neither is the evaporation above mentioned at all times to be perceived. It is possible, however, that in all this there may be a deception; and that instead of supposing the quantity of vapours exhaled to be increased by an easterly wind, the coldness of that wind may only condense and render visible the vapours in the air at that time. But even this supposition is liable to great objections, as our coldest north-winds seldom or never produce such an effect, but on the contrary are attended with dry and serene weather.

Be this as it will, however, an east-wind is usually accompanied with a cold, damp, and unwholesome vapour, which is observed to affect the health both of animals and vegetables, and in many places to produce obstinate intermitting fevers, and also to occasion frequent relapses. In particular spots of the low damp island of Portsea, the ague frequently prevails during the autumnal season, and in some years is much more frequent and violent than in others. It is also observable, that this disease always attacks strangers, or those who have formerly lived on a drier soil, and in a more elevated situation, with greater severity than those who are natives of the island.

The year 1765 was remarkable, not only for the long continuance of the easterly winds, but for an excessive degree of heat, which produced a more violent and general rage of those diseases than had been known for many years before. In the month of August the quicksilver in Fahrenheit's thermometer often rose to 82° in the middle of the day. This considerable addition of heat, together with the want of refreshing rains, greatly spread the fever, increased its violence, and even changed its form in many places. At Portsmouth, and throughout almost the whole island of Portsea, an alarming continual or remitting fever raged, which extended itself as far as Chichester. At the same time, the town of Gosport, though distant only one mile from Portsmouth, enjoyed an almost total exemption from sickness of every kind; whereas in the neighbouring villages and farm-houses, a mild regular tertian ague distressed whole families. The violence of the fever, with its appearances in a continued, remitting, or intermitting form, marked in some measure the nature of the soil. In Portsmouth the symptoms were bad, worse at Kingston, and still more dangerous and violent at a place called *Half-way Houses*; a street so named, about half a mile from Portsmouth, where scarcely one in a family escaped this fever, which generally made its first attack with a delirium. In the large suburb of Portsmouth called the *Common*, it seemed to rage with more violence than in the town, some parts excepted; but even whole streets of this suburb, together with the houses in the dock-yard, escaped its attack.

The marines, who were three times a-week exercised early in the morning on South Sea beach, suffered much from the effect of the stagnant water in an adjoining morass. Half a dozen of them were frequently taken ill in their ranks when under arms; some being seized with such a giddiness of their head, that they could scarcely stand; while others fell down speechless, and upon recovering their senses complained of a violent head-ach. When such patients were received into the hospital, it was observed that some few had a regular ague, but that far the greater number laboured under a remitting fever, in which sometimes indeed there was no perceptible remission for several days. A constant pain and giddiness of the head were the most inseparable and distressing symptoms of this disease. Some were delirious, and a few vomited up a quantity of bile; but in all the countenance was yellow. A long continuance of the fever produced a drop-sy or jaundice, or both. Even a slight attack reduced the most robust constitution to a state of extreme debility; and this weakness, together with the giddi-

ness, continued for a long time after the fever. A scabby eruption now and then made its appearance on the lips and the corners of the mouth: but dry itchy spots over the whole body, resembling much the common itch, and seeming to partake of the nature of that disease, were more frequently observed in the patients at Portsmouth, where there was not the least reason to suspect any infection.

Such is the appearance of the remitting fever occasioned by marsh miasma in England. In the Netherlands its symptoms are not much different. Dr Wind informs us, that at Middleburg, the capital of West Zealand, a sickness generally reigns towards the latter end of August, or the beginning of September, which is always most violent after hot summers. It commences after the rains which fall in the end of July; the sooner it begins the longer it continues, and it is only checked by the coldness of the weather. Towards the end of August and the beginning of September it is a continual burning fever, attended with a vomiting of bile, which is called the *gall sickness*. This fever, after continuing three or four days, intermits, and assumes the form of a double tertian; leaving the patient in a fortnight, or perhaps sooner. Strangers that have been accustomed to breathe a dry pure air do not recover so quickly. Foreigners in indigent circumstances, such as the Scots and German soldiers, who are garrisoned in the adjacent places, are apt after those fevers to have a swelling in their legs and a drop-sy; of which many die.

These diseases, the Doctor observes, are the same with the double tertians common within the tropics. Such as are seized with the gall-sickness have at first some flushes of heat over the body, a loss of appetite, a white foul tongue, a yellow tinct in the eyes, and a pale colour in the lips. Such as live well, drink wine, and have warm clothes and good lodgings, do not suffer so much during the sickly season as the poor people; however, these diseases are not infectious, and seldom prove mortal to the natives.

Sir John Pringle observes, that the prevailing epidemic of autumn in all marshy countries, is a fever of an intermitting nature, commonly of a tertian form, but of a bad kind; which, in the dampest places and worst seasons, appears as a double tertian, a remitting, or even an ardent fever. But however these fevers may vary in their appearance according to the constitution of the patient and other circumstances, they are all of a similar nature. For though, in the beginning of the epidemic, when the heat or rather the putrefaction in the air is the greatest, they assume a continued or a remitting form, yet by the end of autumn they usually terminate in regular intermittents.

In Zealand, where the air is more corrupted than in other parts of the Netherlands, this distemper, as we have already observed, is called the *gall-sickness*; and indeed both the redundancy and depravation of the gall is sometimes so great, that it has been generally ascribed to the corruption and overflowing of that humour. But though it cannot with justice be said to originate from corrupted gall or bile, it is certain that the disease may be continued, and the symptoms aggravated, by an increased secretion and putrefaction of the bile occasioned by the fever. In proportion to the coolness of the season, to the height and dryness of the ground,

Fetres

ground, this distemper is milder, remits or intermits more freely, and removes further from the nature of a continued fever. The higher ranks of people in general are least liable to the diseases of the marshes; for such countries require dry houses, apartments raised above the ground, moderate exercise, without labour in the sun or evening damps, a just quantity of fermented liquors, plenty of vegetables, and fresh meats. Without such helps, not only strangers, but the natives themselves are sickly, especially after hot and close summers. The hardiest constitutions are very little excepted more than others; and hence the British in the Netherlands have always been subject to fevers.

By this distemper the British troops were harassed throughout the whole of the war from 1743 to 1747. It appeared in the month of August 1743; the paroxysms came on in the evening, with great heat, thirst, a violent headach, and often a delirium. These symptoms lasted most of the night, but abated in the morning, with an imperfect sweat, sometimes with an hæmorrhage of the nose or a looseness. The stomach from the beginning was disordered with a nausea and sense of oppression, frequently with a bilious and offensive vomiting. If evacuations were either neglected, or too sparingly used, the patient fell into a continued fever, and sometimes grew yellow as in a jaundice. When the season was further advanced, this fever was attended with a cough, rheumatic pains, and fizy blood. The officers being better accommodated than the common men, and the cavalry who had cloaks to keep them warm, were not so subject to it: and others who belonged to the army, but lay in quarters, were least of all affected; and the less in proportion to their being little exposed to heats, night-damps, and the other fatigues of the service.

In this manner did the remitting fever infest the army for the remaining years of the war; and that exactly in proportion to their distance from the marshy places, of which we have several notable instances in Pringle's observations. In Hungary the same disease appears with still more violence, and is readily complicated with fevers of a truly pestilential nature, by which means it becomes extremely dangerous. Hungary is acknowledged to be the most sickly climate in Europe, and indeed as bad as any in the world. Here it was where the crusaders, in only marching through the country to invade Asia, often lost half their number by sickness; and where the Austrians not long since buried, in a few years, above 40,000 of their best troops, who fell a sacrifice to the malignant disposition of the Hungarian air. The reason of this uncommon malignity is, that Hungary abounds with rivers, which, by often overflowing, leave that low flat country overspread with lakes and ponds of stagnating water, and with large unwholesome marshes. So great is the impurity of these stagnated waters, that by them the rivers, even the Danube, whose course is slow, become in some places corrupted and offensive. The air is moist, and in summer quite sultry. In the nights of harvest, Kramer tells us, it was so very damp, that the Austrian soldiers could not secure themselves from the moisture even by a triple tent-covering. Here epidemical distempers begin constantly to rage during the hottest months of the year; which are July, August, and September: and these complaints, according to

the observations of the physician above-mentioned, are the same with those which are epidemic upon the coast of Guinea, and in the sickly climates of the East and West Indies, of which malignant fevers of the remitting and intermitting kind are the most common and dangerous.

The heat of the sun in Hungary, according to the same author, is more intense than in any other country of Europe; and in proportion to the heat is the pestilential quality of the marshy exhalations. It is constantly observed, that the nearer any city or fort is to a morass or a large river with foul and oozy banks, the more unhealthy are the inhabitants. At such seasons and places, the air swarms with numberless insects and animalcules, a sure sign of its malignant disposition; and the hotter the summer, the more frequent and mortal are the diseases. In short, this country, on account of its unhealthiness, has been termed *the grave of the Germans*; and in Italy, the Campania of Rome is almost equally unhealthy. Lancisus, physician to Pope Clement XI. furnishes us with a very striking instance of the malignant quality of the air of Campania. Thirty gentlemen and ladies of the first rank in Rome having made an excursion, upon a party of pleasure, towards the mouth of the Tyber, the wind suddenly shifting, blew from the south over the putrid marshes, when 29 were immediately seized with a tertian fever, only one escaping.

The island of Sardinia is annually visited with an epidemical sickness, which rages from June to September, and is called by the natives the *intemperies*. In some years there is a want of rain for four or five months; and then it is that this sickness exerts its utmost violence, being always more fatal in some places than in others, and in particular to strangers. Of this the British had a severe proof in 1758.—Admiral Broderick, in the Prince ship of war, anchored in the bay of Oristagni, where 27 of his men, sent ashore on duty, were seized with the epidemical distemper of this island; twelve of them in particular, who had slept on shore, were brought on board delirious. All of them in general laboured under a low fever, attended with great oppression at the breast and at the pit of the stomach, a constant retching, and sometimes a vomiting of bile; upon which a delirium often ensued. These fevers changed into double tertians, and terminated in obstinate quartan agues. It is worthy of remark, that in this ship, which lay only two miles from the land, none were taken ill but such as had been on shore, of whom seven died. The prior of a convent, making a visit to the English officers, informed them, that the intemperies of the island was a remitting or intermitting fever, and that he himself had suffered several attacks of it. Sardinia was formerly so remarkable for its unwholesome air, that the Romans used to banish their criminals thither; and it is at present but thinly peopled, owing to the mortality occasioned by this annual sickness. For although it is about 140 miles long, and in several places 75 miles broad, yet it is computed that the whole number of its inhabitants does not exceed 250,000: an inconsiderable number, when compared with the inhabitants of the lesser, but comparatively more healthful, island of Corsica; though even there the French lost a number of their troops by intermitting and remitting fe-

Tertiana.

Febris

vers. In the island of Minorca, too, Dr Cleghorn informs us, that fevers of this kind prevail exceedingly; that their types are various, their symptoms violent, the intermissions fallacious, and that they frequently and suddenly prove fatal. It is more than probable, he adds, from the accounts of several physicians and travellers, that epidemical tertians are not wholly confined to the coasts and islands of the Mediterranean, but that they are equally frequent and destructive in many other parts of the globe; and perhaps may be deemed the anniversary autumnal distempers of most hot countries in the world. And though in the mild climate of Britain, a tertian may always easily be cured when once it is discovered; yet in warm climates, such is the rapid progress of the distemper, that it is necessary to know it in the very beginning, which is very difficult for those who have never seen any but the tertians usually met with in Britain.

From Dr Cleghorn's account of Minorca, however, it doth not appear why that island should be so much infested with fevers of this kind, since it is far from being a marshy country; nay, on the contrary, is very dry. The south wind, he observes, is very unhealthy; and it is the prevalence of this wind which brings on the fever: but still the difficulty is not removed, because the sea-air is so far from bringing on such dangerous diseases, that it is one of the greatest preservatives against them when it can be had. As to the moisture which must necessarily accompany an insular situation, that cannot reasonably be admitted as a cause of this or any other disease. In the London Medical Observations we find a paper on a subject very similar to the present, namely, the mischiefs produced by lying in damp sheets, or being exposed to moist vapour. The author tells us, that he hardly knows a distemper the origin of which hath not by some been ascribed to lying in a damp bed, or sitting in a wet room; and yet he does not know any one which will certainly be produced by these causes, and people frequently expose themselves to such causes without suffering any ill effects. "It must be owned indeed, (says he), that the vapours arising from the bilge-water of ships tend to produce a scurvy. The swampy plains also near the mouths of great rivers which are often overflowed, and low grounds which cannot readily be drained, and those tracts of land where the thickness and extent of the woods keep the ground moist and half putrid for want of ventilation, are destructive to the neighbouring inhabitants, by occasioning obstinate intermittents in the colder climates, and pestilential fevers in the hotter regions. But all this mischief arises not merely from moisture, but from an unventilated and putrid moisture; for the inoffensiveness of mere wetness, untainted with putridity, may be reasonably inferred from the following considerations. The air is often fully saturated with moisture, and could not be more filled by the vapours arising from a chamber covered with water; and yet neither is any epidemical distemper produced by it, nor are those remarkably aggravated with which the sick happen at that time to be afflicted. The air from rivers and from the sea is probably more replenished with vapours than inland countries cleared of their woods: yet the most celebrated of the ancient physi-

cians recommended the bank of a running river for the situation of a house, on account of its peculiar healthfulness; and many invalids are sent by the modern physicians to the sea side, only for the benefit of the sea air.

"Where the sailors are cleanly, and not too much crowded, they are often as healthy during long voyages at sea, as they would have been upon any part of the land. Venice is not observed to be less healthy than London or Paris.

"Those who are much disposed to sweat, lie many hours in bed-clothes impregnated probably with a less wholesome moisture than would have been left in the sheets half-dried after washing; and I have not yet had reason to think that any remarkable injury was done to the health by the continuance of such sweats almost every night for weeks, and for months, except what arose from the too great copiousness of this evacuation.

"Children, and such as are troubled with the stone, and those who, from other infirmities or age, constantly wet their beds with their urine, do not appear to suffer in their health on this account.

"It is a common practice, in some disorders, to go to bed with the legs or arms wrapped in linen cloths thoroughly soaked in Malvern water, so that the sheets will be in many places as wet as they can be; and I have known these patients and their bedfellows receive no harm from a continuance of this practice for many months. Nor can it be said that the Malvern water is more innocent than any other water might be, on account of any ingredients with which it is impregnated; for the Malvern water is purer than that of any other spring in England which I ever examined or heard of.

"The greatest valetudinarians do not scruple to sprinkle lavender-water upon their sheets; and yet, when the spirit is blown off, there is left what is as truly water as if it had been taken from the river.

"Is it observed, that laundresses are peculiarly unhealthy above other women, though they live half their time in the midst of wet linen, in an air fully saturated with vapours? Many other employments might be mentioned, the persons occupied in which are constantly exposed to wet floors or pavements, or to be surrounded with watery vapours, or to have their clothes often wet for many hours together.

"Is it the coldness of wet linen which is to be feared? But shirts and sheets, colder than any unfrozen water can be, are safely worn and lain in by many persons, who, during a hard frost, neither warm their shirts nor their sheets.—Or does the danger lie in the dampness? But then how comes it to pass, that a warm or cold bath, and long-continued fomentations, can be used, without the destruction of those who use them? Or is it from both together? Yet we have long heard of the thickness and continuance of the cold fogs in the seas north-west of England, but have never yet been told of any certain ill effect which they have upon those that live in these countries."

With regard to the causes of fevers, however, Dr Lind is of opinion, that noxious vapours arising from the earth are for the most part to be blamed. Even in countries seemingly dry, and where violent rains are

Tertiana.

not

Febres

not frequent, he thinks that the air may load itself with putrid exhalations from the ground; and that, except in the burning deserts of Arabia or Africa, people are nowhere exempt from diseases occasioned by putrid moisture. In most of the hot countries, however, the pernicious effects of the putrid vapours are by no means equivocal. In Guinea, they seem to be more extraordinary than any where else in the world; neither indeed can it be supposed, that a hot and moist atmosphere can be without putrescency. It may in general be remarked, that in sultry climates, or during hot weather, in all places subject to great rains, where the country is not cleared and cultivated, but is over-run with thickets, shrubs, or woods, especially if there are marshes or stagnating waters in the neighbourhood, sickness may be dreaded, and particularly the remitting fever of which we now treat. The fens, even in different counties of England, are known to be very prejudicial to the health of those who live near them, and still more so to strangers; but the woody and marshy lands in hot countries are much more pernicious to the health of Europeans. In all those unhealthy places, particularly during fogs or rains, a raw vapour, disagreeable to the smell, arises from the earth, and especially in the huts or houses. But of all the vapours which infest the torrid zone, the most malignant and fatal are the *harmattans*: They are said to arise from the conflux of several rivers in the king of *Dormeo's* dominions at Benin (the most unwholesome part of Guinea), where travellers are obliged to be carried on mens backs for several days journey, through swampy grounds, and over marshes, amidst stinking ooze, and thickets of mangrove trees which are annually overflowed. These vapours come up the coast to a surprising distance, with the south-east and north-east winds: and it has been observed, that in their progress they have often changed both the course of the winds and of the sea currents. The times of their appearance at Cape Coast are the months of December, January, or February. The north-east and south-east winds are always unhealthy, but particularly so during the harmattan season. Some years this vapour is scarcely perceptible; but in others it is thick, noxious, and destructive to the blacks as well as whites.—The mortality is in proportion to the density and duration of the fog. It has a raw putrid smell; and is sometimes so thick, that a person or house cannot be discerned through it, at the distance of 15 or 20 yards: and it continues so for 10 or 14 days; during which it opens the seams of ships, splits or opens the crevices of wood as if shrunk or dried with a great fire, and destroys both man and beast.—In the year 1754 or 1755, the mortality occasioned in Guinea by this stinking fog was so great, that in several negro towns the living were scarce sufficient to bury the dead.—Twenty women brought over from Holland by a new governor to the *Castle del Mina*, perished, together with most of the men in the garrison. The gates of Cape Coast castle were shut up for want of centinels to do duty; the blacks dying at this time as well as the white people. It is lucky that it is only in some years that *harmattans* are so very thick and noxious, otherwise that part of the country would be depopulated. It is observed that all fogs are extremely unhealthy in those parts, particularly before and after the rainy seasons; but the above account of the *harmat-*

tans appeared so very extraordinary and incredible to some of Dr Lind's readers, that he thought proper to publish a further corroboration of the facts above-mentioned. "A gentleman (says he), who had long resided at Cape Coast castle, informed me, that during the time of this fog, being in the upper chambers of the fort, the boards of the floor shrunk so much, that he could discern the candles burning in the apartments below him (there are no plaster ceilings used in those hot countries), and that he could then even distinguish what people were doing in the apartments below; the seams of the floor having opened above half an inch, while the fog lasted, which afterwards, upon its being dispelled, became close and tight as before."

In this country the rains and dews seem to be possessed of qualities almost equally pernicious with the fogs. This much is certain, that in Guinea, many of the principal negroes, and especially of the mulattoe Portuguese, take the utmost precaution to avoid being wet with those rains, especially such as fall first. At the setting in of the rainy season, they generally shut themselves up in a close well-thatched hut, where they keep a constant fire, smoke tobacco, and drink brandy, as preservatives against the noxious quality of the air at that time. When wet by accident with the rain, they immediately plunge themselves into salt-water, if near it. Those natives generally bathe once a-day, but never in the fresh water rivers when they are overflowed with the rains: at such times they prefer for that purpose the water of springs. The first rains which fall in Guinea are commonly supposed to be the most unhealthy. They have been known, in 48 hours, to render the leather of the shoes quite mouldy and rotten; they stain clothes more than any other rain; and soon after their commencement, even places formerly dry and parched swarm with frogs. At this time skins, part of the traffic of Senegal, quickly generate large worms; and it is remarked, that the fowls, which greedily prey on other insects, refuse to feed on these. It has been farther observed, that woollen cloths wet in those rains, and afterwards hang up to dry in the sun, have sometimes become full of maggots in a few hours.—It is also probable, that as in some of those countries the earth, for six or eight months of the year, receives no moisture from the heavens but what falls in dews, which every night renew the vegetation, the surface of the ground in many places becomes hard and incrustated with a dry scurf, which pens up the vapours below: until by the continuance of the rains for some time, this crust is softened, and the long pent up vapours set free. That these dews do not penetrate deep into the earth is evident from the constant dryness and hardness of such spots of ground in those countries as are not covered with grass and other vegetables. Thus the large rivers in the dry season being confined within narrow bounds, leave a great part of their channel uncovered, which having its moisture totally exhaled, becomes a solid hard crust; but no sooner the rains fall, than by degrees this long parched up crust of earth and clay gradually softens, and the ground, which before had not the least smell, begins to emit a stench, which in four or five weeks becomes exceedingly noisome, at which time the sickness is generally most violent.

This sickness, however, is not different from the remitting

Tertian.

Fever

remitting fever which has been described under so many various forms and names. An inflammatory fever is seldom observed, during the season of sickness, in this part of the world; and we shall conclude our description of the *amphimerina paludosa* with some extracts from the surgeon's journal of a ship that sailed up the rivers of Guinea.

"On the 5th of April we sailed up the river of Gambia, and found all the English in the fort in perfect health. The surgeons of the factory informed me, that a relaxation of the stomach, and consequently a weakened digestion, seemed to bring on most of the diseases so fatal to Europeans in the sickly season. They were generally of a bilious nature, attended with a low fever, sometimes of a malignant, at other times of a remitting kind.—On the 12th of April, after sailing 30 miles up the river St Domingo, we came to Catchou, a town belonging to the Portuguese, in Lat. 20° N. In this town were only four white people, the governor and three friars. The number of whites in the trading ships were 51. One morning, towards the latter end of April, a little rain fell. On the 13th of May there was a second shower, accompanied with a tornado. On the 18th of May it rained the whole day; and the rain continued, with but short intervals, until the beginning of October.

"In the month of June, almost two-thirds of the white people were taken ill. Their sickness could not be well characterised by any denomination commonly applied to fevers: it however approached nearest to what is called a *nervous fever*, as the pulse was always low, and the brain and nerves seemed principally affected. It had also a tendency to frequent remissions. It began sometimes with a vomiting, but oftener with a delirium. Its attack was commonly in the night; and the patients, being then delirious, were apt to run into the open air. I observed them frequently recover their senses for a short time, by means of the heavy rain which fell upon their naked bodies. But the delirium soon returned: they afterwards became comatose, their pulse sunk, and a train of nervous symptoms followed; their skin often became yellow; bilious vomitings and stools were frequent symptoms. The fever reduced the patient's strength so much, that it was generally six weeks or two months before he was able to walk abroad. A consuming flux, a jaundice, a dropsy, or obstructions in the bowels, were the consequences of it. Of 51 white men, being the companies of four ships which were at Catchou, one-third died of the fever, and one-third more of the flux, and other diseases consequent upon it; and of these not one was taken ill till the rains began.

"I believe, on the whole face of the earth, there is scarce to be found a more unhealthy country than this during the rainy season: and the idea I then conceived of our white people was by making a comparison of their breathing such a noxious air, with a number of river-fish put into stagnating water; where, as the water corrupts, the fish grow less lively, they droop, pine away, and many die.

"Thus some persons became dull, inactive, or slightly delirious, at intervals; and, without being so much as confined to their beds, they expired in that delirious and comatose state in less than 48 hours, after being

N° 203.

in apparent good health. The white people in general became yellow; their stomach could not receive much food without loathing and retchings. Indeed it is no wonder that this sickness proved so fatal, that recoveries from it were so tedious, and that they were attended with fluxes, dropsies, the jaundice, ague-cakes, and other dangerous chronic distempers. It seemed more wonderful to me that any white people ever recover, while they continue to breathe so pestiferous an air as that at Catchou during the rainy season. We were, as I have already observed, 30 miles from the sea, in a country altogether uncultivated, overflowed with water, surrounded with thick impenetrable woods, and over-run with slime. The air was vitiated, noisome, and thick; insomuch that the lighted torches or candles burnt dim, and seemed ready to be extinguished: even the human voice lost its natural tone. The smell of the ground and of the houses was raw and offensive; but the vapour arising from putrid water in the ditches was much worse. All this, however, seemed tolerable, when compared with the infinite numbers of insects swarming every where, both on the ground and in the air; which, as they seemed to be produced and cherished by the putrefaction of the atmosphere, so they contributed greatly to increase its impurity. The wild bees from the woods, together with millions of ants, over-ran and destroyed the furniture of the houses; at the same time, swarms of cockroaches often darkened the air, and extinguished even candles in their flight; but the greatest plague was the musketos and sand-flies, whose incessant buzz and painful stings were more insupportable than any symptom of the fever. Besides all these, an incredible number of frogs on the banks of the river made such a constant and disagreeable croaking, that nothing but being accustomed to such an hideous noise could permit the enjoyment of natural sleep. In the beginning of October, as the rains abated, the weather became very hot; the woods were covered with abundance of dead frogs, and other vermin, left by the recess of the river; all the mangroves and shrubs were likewise overspread with stinking slime."

After so particular a description of the remitting fever in many different parts of the world, we presume it will be needless to take notice of any little varieties which may occur in the warm parts of America, as both the nature and cure of the distemper are radically the same: neither shall we lengthen out this article with further descriptions of remitting fevers from the works of foreign authors, as, from what we have already said, their nature cannot well be mistaken.

Cure. The great difficulty in the cure of remitting fevers arises from their not being simple diseases, but a complication of several others. Fevers, properly speaking, have but three or four different appearances which they can assume without a complication. One is, when they are attended with a phlogistic diathesis; another is, when they assume the form of genuine intermittents; a third is, when they produce a great debility of the nervous system; and the fourth is, when along with this debility there is also a rapid tendency to putrefaction. If, therefore, all these species happen to make an attack at once, the most dangerous fever we can imagine will be produced; and however contrary it may be to our theories to admit the possibility of such

Tertiana.

Febres such an attack, the truth of the fact is too often confirmed by fatal experience. In the beginning of remittent fevers, for instance, the symptoms indicate a high degree of inflammation: but if the practitioner attempts to remove this inflammation by blood-letting or other evacuations, the pulse sinks irrecoverably, and the person dies with such symptoms as show that the nervous system has been from the beginning greatly affected; at the same time the high stimulants and cordials, or the bark, which would have conquered the nervous part of the disease, increase the inflammatory part of it to such a degree, that, by a too early exhibition of them the patient also dies, but after another manner.

In the remitting fever of the East Indies, Dr Lind of Windsor formed the following indications of cure.

1. To allay the violence of the fever. 2. To evacuate the putrid humours, and take great care to prevent the body from inclining to putrefaction. 3. To keep up the strength of the patient as much as possible during the disorder. 4. To lose no time in preventing the return of the paroxysms.

To allay the violence of the fever, every thing that can contribute to increase it ought to be carefully avoided or removed; such as great heat, too strong a light falling on the eyes, noise, and motion. If during the paroxysm the head and loins be affected with violent pains, the pulse be full and hard, and the heat intense, bleeding may be used, but with the greatest caution: for, however useful this operation may be in cold climates, the success of it in warm ones is so far from being certain, that the lives of the patients have been often very much endangered, nay even destroyed by it. Dr Badenoch, and the surgeon of the Ponsborne, endeavoured each of them to relieve two patients by blood-letting; and the consequence was, that each of them lost one patient. Dr Lind bled two patients; one of whom was Mr Richardson, the first mate of the ship, who complained of a most violent pain in his head, with a full hard pulse. About four or five ounces of blood were taken from him, by which he was greatly relieved: nor was the cure retarded by it; nay, the fever afterwards became less irregular. At the time the other patient was bled, the disease was exceedingly frequent and violent. He was so earnest for bleeding, that he fired all the rest with the same desire, swearing, that by refusing them this only remedy, every one of them would be sent to their graves. To quiet them, therefore, and get quit of their importunities, the Doctor complied with their request, and took about five or six ounces from him who had been the first to require it. The consequence was, that he immediately lost his strength; and in less than an hour, during which time he made his will, was carried off by the next fit. It is necessary, however, to observe, and indeed the Doctor himself makes the observation, with regard to this patient, that he was bled at an improper time, namely, between the fits; whereas, had he been bled in the hot fit, it is possible he might have been relieved.

In support of the advantages to be derived from bleeding under proper circumstances, we have the authority both of Cleghorn and Pringle. As Dr Cleghorn practised in a very hot country, his observations must in the present case have greater weight

VOL. XI. Part I.

than those of Pringle, who practised in a colder one. The former acquaints us, that if he was called in early enough, unless there was a strong contra-indication, he always used to take away some blood from people of all ages; namely, from robust adults, 10 or 12 ounces; from others a smaller quantity, in proportion to their strength and years. And further, if a violent head-ach, obstinate delirium, and great heat or pains of the bowels, were urgent, the bleeding was repeated within a day or two. By this seasonable evacuation, he found the vehemence of all the paroxysms somewhat diminished; the apyrexies became more complete; the operation of emetics and cathartics rendered safer and more successful; and the terrible symptoms which happened about the height of the distemper, such as raving *sopor*, difficulty of breathing, inflammations of the abdominal viscera, &c. were either prevented or mitigated. But if the fever had continued for some time before he was called, and the mass of blood appeared to be too much melted down or inclined to a putrid dissolution, he either abstained from bleeding entirely, or took away a very small quantity, though some importunate symptoms might seem to require a larger evacuation. As to the time of performing the operation, he acquaints us, that it is safe enough, except when the cold fit lasts or is soon expected, or while the skin is covered with critical sweats; and that he usually opened a vein in the beginning of the hot fit; by which means the sick were relieved, the immoderate heat of the body, which is often productive of fatal effects, was diminished, and the critical sweats brought on sooner and in greater abundance.

But though Dr Lind found venesection to be of such pernicious tendency in his patients, cooling acidulated liquors were of the utmost service, as they corrected the putrid humours, lessened the heat and thirst, and of course prevented the fever from arriving at so great an height as it would otherwise have done. Those cooling liquors are the best which are made up with some farinaceous substance, as they most easily unite with our fluids. Fossile acids too, and crystals of tartar, especially the latter, are of considerable use, not only in this but in other fevers. The neutral salts, prepared with the juice of lemons, were likewise given with success during the heat of the fever. They lessen the nausea, the fits become more regular, and the remissions more full; and they are particularly grateful when given in a state of effervescence. The good effects of these draughts we are in a great measure to ascribe to the antiseptic quality of the fixed air extricated from them during the effervescence; of which we shall speak more fully when treating of the typhous fevers.

During the remission, it is proper to evacuate the putrid humours by small doses of ipecacuanha, or rather tartar emetic. The tartar emetic indeed appears to be endowed with some kind of febrifuge virtue, which Dr Cullen thinks is owing to its relaxing the febrile spasm taking place in the capillary vessels. But should there appear any symptoms of a topical inflammation in some of the abdominal viscera, a thing which never happens unless the disorder has been of some standing, vomiting is to be avoided, and we are to depend upon purgatives alone for the

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Tertiana.

Febres

evacuation of the putrid bile, which are always useful in the cure of this disorder. But all acrid and strong purgatives are to be carefully avoided, and only the mild antiseptic ones made use of, such as crystals of tartar, or tamarinds made up with manna or with Glauber's salt.

Under the article GALL, we have observed, from Dr Percival, the effect which vegetable acids have in sweetening putrid bile; whence it seems probable, that a liberal use of these acids would be much more serviceable than a repetition of any kind of purgatives. Though in these diseases there is a great quantity of putrescent bile collected in the body, yet it seems much more probable that this is the *effect* rather than the *cause* of the disorder; and therefore, though we carry off the quantity collected ever so often, more of the same kind will still be produced by the putrescent disposition of the other fluids, at the same time that the strength of the patient must necessarily be diminished by repeated evacuations, when it ought rather to be kept up by all possible means. We ought well to observe, however, that the mineral acids have not that property of sweetening putrid bile which the vegetable ones have; and therefore the same relief will not be given by them which might reasonably be expected from vinegar or lemon-juice.

In order to keep up the strength of the patient, good food is absolutely necessary. Dr Lind allowed the sick small messes of panada made with boiled rice and barley mixed with currants or raisins and prunes, seasoned with sugar and a little wine, especially claret. During the paroxysms, they had gruel made of flour and rice, with sugar and the juice of acid fruit; and when the fit went off, a little wine was added to this mixture.

The shirts and bedding must be very often changed and well aired; their stools, and all filth and nastiness, are to be immediately removed; the places where they are lodged should be well aired and frequently sprinkled with vinegar; and, in the last place, the sick must be exceedingly well nursed. Blisters, according to Dr Lind, should never be used till the fever has been of long continuance, or the spirits and pulse of the patient have begun to flag. But here our author has implicitly followed Dr Huxham, whose theory concerning the use of blisters is now found to be erroneous. According to that celebrated author, blisters are capable of doing considerable hurt in all cases where there is a tendency to inflammation, by increasing the motion of the fluids and the oscillatory power of the vessels, both of which are already too great. They are also improper, according to him, where there is a considerable tendency of the fluids to putrefaction; because he supposes the salts of these flies to operate in the same manner with volatile alkalies, that is, by dissolving and putrefying the blood still farther. But Sir John Pringle has shown, that, in inflammatory fevers as well as those of the putrid kind, both blisters and volatile salts may be of service; the latter, particularly, he hath experimentally proved to be so far from promoting putrefaction, that they are exceedingly strong antiseptics.

In the East Indies, Dr Lind found it absolutely necessary to exhibit the bark in large quantities, and as early as possible. By this method he not only se-

cured the patient from the imminent danger of death to which he was exposed at every fit, but likewise conquered those obstructions which were apt to ensue in the abdominal viscera, and which are to be attributed to the continuance of the disorder, and not to the bark employed to cure it. He always gave the bark during the second remission, as all his care was during the first to cleanse the primæ viæ. He observes, however, that it is to no purpose to give the bark till the necessary purgations are over; but assures us, that it never fails, unless from the coming on of a vomiting or diarrhoea it cannot be taken in sufficient quantities before the return of a paroxysm. To prevent the medicine from vomiting or purging, he mixed a few drops of liquid laudanum with every dose of it. Half a drachm was given every half hour in some convenient vehicle, beginning as soon as the fever had considerably abated, and the pulse was returned nearly to its natural state; both which generally happened before the sweats were over. An ounce of the bark was sometimes found too little to check the fever, but an ounce and a half never failed. It must be continued daily in small doses till the patient has recovered his strength, and then a greater quantity must be given, especially at the season when the rivers overflow the country.

Dr Pringle found the autumnal remittents in the Netherlands complicated with a great many inflammatory symptoms; for which reason it was generally found necessary to open a vein in the beginning. The vernal and later autumnal remitting fevers are accompanied with pleuritic and rheumatic pains from the coldness of the weather, and on that account require more bleeding. A physician unacquainted with the nature of the disease, and attending chiefly to the paroxysms and remissions, would be apt to omit this evacuation entirely, and give the bark too soon, which would bring on a continued inflammatory fever. In these countries a vein may be safely opened either during the remission or in the height of a paroxysm; and our author also found good effects resulting from bleeding in the hot fits of the marsh-fever, even after it had almost come to regular intermissions. After bleeding, a purgative was usually exhibited, of which he gives us the following formula.

R. Infusi senæ commun. ℥iij.

Elect. Lenitiv. ℥ss.

Nitr. pur. ʒi.

Tinct. sen. ʒvi. M.

Of this only one half was taken at once; and if it did not operate twice in four hours, the remainder was then taken. This potion agreed with the stomach, purged plentifully, and therefore was a very useful composition. Next morning, when there was almost always some remission, he gave one grain of emetic tartar rubbed with 12 grains of crabs-eyes, and repeated the dose in two hours, if the first had little or no effect; or at any rate in four hours. This medicine was intended not only to vomit, but also to operate by stool, and excite a sweat. If these evacuations were procured, the fever generally became easier, and was even sometimes cured. This he prefers to the ipecacuanha, and therefore in the latter years of his practice disused that root entirely. The same medicine was repeated next day or the day following; or if not,

Tertiana.

Febres not, a laxative clyster was thrown in: and this method was continued till the fever either went off altogether, or intermitted in such a manner as to be cured by the bark.

A similar method was followed by Dr Huck in the remitting fevers of the West Indies and North America. In the beginning he let blood; and in the first remission gave four or five grains of ipecacuanha, with from half a grain to two grains of emetic tartar. This powder he repeated in two hours, taking care that the patient should not drink before the second dose; for then the medicine more readily passed into the bowels after it had operated by vomiting. If after two hours more the operation either way was small, he gave a third dose, which commonly had a good effect in opening the first passages; and then the fever either went quite off, or intermitted in such a manner as to yield to the bark. On the continent, he found little difficulty after the intermission; but in the West Indies, unless he gave the bark upon the very first intermission, though imperfect, the fever was apt to assume a continued and dangerous form.

In the remitting fevers of hot countries, however, it must be observed, that the lancet must in all cases be much more sparingly used than in similar diseases of the colder regions; and we must also be sparing of venesection in those countries where the marsh effluvia are very strong and prevail much. For this reason Dr Lind of Hollar greatly condemns the practice of indiscriminate bleeding when people first arrive in hot climates. The first diseases indeed which occur in a voyage to the southward are for the most part of an inflammatory nature, and owing to a sudden transition from cold to hot weather. This occasions a fullness and distension of the vessels; whence all Europeans, on their first arrival under the tropic, bear evacuations much better than afterwards. The practice of indiscriminately bleeding, however, a number of the ship's company when they first come into a warm latitude, is by no means found to answer the purpose of a preventive. In such cases, indeed, as plainly indicate a plethoric disposition brought on by the heat, blood-letting is certainly useful. The signs of this are a pain and giddiness in the head; a heaviness and dulness of the eyes, which sometimes appear slightly inflamed; there is also commonly a sense of weight and fulness in the breast, the pulse at the same time being quick and oppressed.

But the case is quite different after a longer continuance of sultry weather, and when the constitution is in some measure habituated to the hot climate. For it is then observed, that the symptoms of inflammations in the bowels, even the most dangerous, are not near so severe in such climates as in cold countries; nor can the patients bear such large evacuations. The physician, however, must take care not to be misled by the apparent mildness of the symptoms: for he will find, notwithstanding such deceitful appearances, that the inflammation makes a more rapid progress in hot countries than in cold, suppurations and mortifications being much more suddenly formed; and that in general all acute distempers come sooner to a crisis in the warm southern than in colder regions. Hence it is an important rule of practice in those climates, to seize the most early opportunity, in the commencement of all

threatening inflammations, to make frequent though not copious evacuations by blood-letting. For by delay the inflammation quickly passes from it first to its last or fatal stage; at least an imperfect crisis in such inflammatory fevers ensues, which fixes an obstruction in the viscera extremely difficult to remove.

It is indeed a general maxim with some physicians in the West Indies, that in most acute distempers bleeding in that country is prejudicial. This is founded upon a supposition that the crassamentum of the blood is thinned, and the solids greatly weakened, by the heat of the climate. It is therefore objected, that bleeding in such an habit of body weakens the powers of nature, and withdraws the strength which is requisite to support the patient until the crisis of the fever.

This reasoning is partly just; but, like all general maxims, will admit of exceptions. First with regard to sailors, it is to be remembered, that they are more exposed to quick vicissitudes of heat, cold, damps, and to various changes of the air and weather, than most of the other inhabitants of the Torrid Zone. Add to this, that their intemperance, and the excesses they are apt to fall into whenever it is in their power to commit them, render them more liable to inflammations than any other set of people. Hence their diseases require more plentiful evacuations than the land-inhabitants of those parts of the world, and generally they bear them better. But with regard to the natives of the country, or those who have remained long there, it must be proper to bleed them very sparingly, making a small allowance for the different seasons of the year, the temperature of the air, and the situation of the places where they reside. Thus, in some parts, even on the island of Jamaica, at particular seasons, the weather is cool; wherefore, in these places, and at such seasons, the inhabitants having their fibres more rigid, and a firmer crasis of their blood, bear venesection much better.

In cold countries the state of the air greatly assists in restoring the impaired spring of the fibres; whereas every thing almost in warm weather, such as heat, moisture, &c. concur to relax and weaken the habit of body. Thus we may daily see persons in Britain, after having suffered a most severe fit of sickness, recover their strength and spirits in a few days, and in a very short time their natural constitution. But the case is very different in the sultry regions of the Torrid Zone, or indeed in any part of the world where the heat of the season causes the mercury to stand for any length of time at the 77th degree and upward of Fahrenheit's thermometer. During such an excess of heat, debility after fevers is apt to remain with European constitutions for several months. In Jamaica, the convalescents are sent to the cool summits of the mountains; but a retreat to a more northern climate is often absolutely necessary to recover their wonted tone and vigour of body. It is a well-established observation, that the negroes and aborigines of the Torrid Zone cannot bear plentiful evacuations by the lancet. They commonly mix the most stimulating poignant spices with their ordinary light food, and this is found by experience suitable to their constitutions.

As proper preventives for the dangerous fevers of which

Febres

which we are treating, Dr Lind on all occasions recommends the avoiding of stagnant water, or putrid marshes; the use of proper food, cleanliness, and sobriety. Of the propriety of removing from the neighbourhood of those places whose pestilential effluvia produce the disorders, we cannot possibly entertain a doubt; and of the efficacy of proper food in preventing putrid disorders he gives a remarkable instance in the Sheerness man of war, bound to the East Indies. As they went out, the men being apprehensive of sickness in so long a voyage, petitioned the captain not to oblige them to take up their salt provisions, but rather to permit them to live upon the other species of their allowance. It was therefore ordered, that they should be served with salt-meat only once a-week; and the consequence was, that, after a passage of five months and one day, the ship arrived at the Cape of Good Hope without having a single person sick on board. As the use of Sutton's pipes had been then newly introduced into the king's ships, the captain was willing to ascribe part of such an uncommon healthfulness to their beneficial effects; but it was soon discovered, that, by the neglect of the carpenter, the cock of the pipes had been all this while kept shut. This ship remained in India some months, where none of the men, except the boat's crew, had the benefit of going on shore; notwithstanding which, the crew continued to enjoy the most perfect state of health; they were, however, well supplied with fresh meat. On leaving India, knowing they were to stop at the Cape of Good Hope, and trusting to a quick passage, and the abundance of refreshments to be had there, they eat their full allowance of salt-meats, during a passage of only 10 weeks; and it is to be remarked the air-pipes were now open. The effect of this was, that when they were arrived at the Cape, 20 of them were afflicted in a most miserable manner with scorbutic and other disorders. These, however, were speedily recovered by the refreshments they met with on shore. Being now thoroughly sensible of the beneficial effects of eating, in these southern climates, as little salt meat as possible when at sea, they unanimously agreed, in their voyage home from the Cape, to refrain from their too plentiful allowance of salt flesh. And thus the Sheerness arrived at Spithead, with her full complement of 160 men in perfect health and with unbroken constitutions; having in this voyage of 14 months and 15 days buried but one man, who died in a mercurial salivation.

Thus we see, that a free and pure air is not a sufficient preservative against a putrescent state of the fluids, without proper food; and, on the other hand, we have a very remarkable instance of the inefficacy of the most salutary food to prevent putrid diseases, in a very noxious state of the atmosphere. In the year 1717, at the siege of Belgrade in Hungary, the fever of the country, and the flux, occasioned a most extraordinary mortality among the troops. The dread of these diseases caused every one, as may naturally be supposed, to have recourse to different precautions for self-preservation. Prince Eugene, the commander in chief, had water and the provisions for his table sent him twice a-week from Vienna. The pure stream of the river Kahlenberg was regularly brought to him: he avoided all excesses, and lived re-

gularly, or rather abstemiously; refreshed himself often by eating a cool melon; and mixed his usual wine, which was Burgundy, with water. Yet notwithstanding his utmost care, he was seized with a dysentery; which would have quickly put an end to his life, had not the speedy conclusion of that campaign permitted him to make a quick retreat.

At this unhealthy season, when hardly one imperial officer, much less their several domestics, escaped those malignant diseases, the renowned Count Bonneval and his numerous retinue continued in perfect health, to the surprise, or, to use the words of Dr Kramer, to the envy, of all who beheld him. The only precaution he used was to take, two or three times a-day, a small quantity of brandy in which the bark was infused; and he obliged all his attendants and domestics to follow his example. It is no less remarkable that the count, placing his certain preservation in the use of this single medicine, lived for many years afterwards in the most unhealthy spots of Hungary, without any attack or apprehension of disease; and continued to enjoy a perfect state of health during the hottest and most sickly seasons. And thus, with an unbroken and sound constitution, which is seldom the case of those who reside long in such climates, he lived to a great age. There is an instance produced by the same author of a whole regiment in Italy having been preserved by the use of the bark from the attack of these malignant diseases, viz. the flux, and bilious fever as it is frequently called, when the rest of the Austrian army, not pursuing that method, became greatly annoyed with them.

The intemperance and irregular living of those Europeans who visit the hot climates is frequently accused as the cause of their destruction; but, our author thinks, without sufficient reason: for though intemperance will make the body more liable to receive such diseases, it will not bring them on. It must by no means, however, be imagined, that in these climates Europeans may with impunity be guilty of excesses in eating or drinking; for the least error in that way will often prove fatal by debilitating the body, whose utmost strength in time of full health was perhaps scarce sufficient to resist the pestilential miasmata of the atmosphere.

It appears, therefore, from the concurrent testimony of the most eminent physicians, that the most proper medicine to be used, either as a preventive or cure for remitting and intermitting disorders is the Peruvian bark, administered with proper precautions, and after the *primæ viæ* have been evacuated of the putrid bilious matter collected in them. In those species of *tritæophya*, &c. belonging to this class, enumerated by Sauvages, the same remedies only were useful; but in that pestilential distemper which he calls *tritæophya Vratislaviensis*, he tells us, that washing the body with water sometimes hot sometimes cold, watery clysters, and plenty of aqueous drink, were likewise of use.

GENUS II. QUARTANA; the QUARTAN FEVER.
Quartana auctorum, Sauv. Gen. 89. Lin. 17.
Vog. 3. Sag. 711. Hoffm. II. p. 23. Junck. tab. 81.

The Genuine QUARTAN. Sp. I. var. 1. A.
Quartana legitima, Sauv. sp. 1. Sydenham de morb. acut. cap. v.

Description.

Quartana.

Febres

Description. The genuine quartan, according to Juncker, keeps its form more exactly than other intermittents; scarcely coming on at any other time than four or five in the afternoon. The cold is less violent than in the tertian; but is very perceptible, though it doth not proceed to such a height as to make the limbs shake; and continues for about two hours. It is preceded and accompanied by a languor both of body and mind. There is seldom any vomiting unless when the stomach is manifestly overloaded with aliment; neither is there any diarrhoea, but the belly in general is rather bound, not only on the days on which the paroxysm takes place, but also on the intermediate ones. The heat, which slowly succeeds the cold, is less troublesome to the patient by its violence than by the uneasy dryness of the skin, which is scarce ever moistened with sweat. This heat rarely continues longer than four or six hours, unless perhaps at the first or second paroxysm. It is accompanied also with a giddiness and dull pain of the head. On the termination of the paroxysm, the patient returns to a middling state of health, and continues in the same for the rest of the intermediate days; only there remains somewhat of a loathing, and a deep-seated pain as if the person was all over bruised or broken, which kind of sensation the physicians are wont to call *osteocopus*. The fit returns every fourth day, and that precisely at the same hours, being rarely postponed.

Causes of, and persons subject to, this disorder. The same general causes concur in producing this as in other intermittents, namely marsh miasmata, and whatever can dispose the body to be easily affected by them. Studious people, and those of a melancholic turn, are said to be particularly subject to quartans; but what are the immediate causes which produce a return of the fits every fourth day, instead of every day, or every third day, must probably lie for ever concealed, as depending upon the secret and inexplicable mechanism of the human body.

Prognosis. A simple quartan, where there is no reason to dread any induration of the viscera, may very certainly admit of a cure; and the prognosis can never be unfavourable, unless in cases of extreme weakness, or where the distemper hath been unskilfully treated.

Cure. This does not in the least differ from that which hath been fully laid down for the simple tertian, and which it is therefore needless to repeat here.

The *Duplicated* QUARTAN. Sp. I. var. 1. B.

154 Quartana duplicata, Sauv. sp. 4. Bonet.

This is entirely similar to the duplicated tertian already mentioned; proper allowance being made for the difference between the type of a tertian and quartan.

The *Triplified* QUARTAN. Sp. I. var. 1. C.

155 Quartana triplicata, Sauv. sp. 16.

This hath three paroxysms every fourth day, while the intermediate days are entirely free from fever.

The *Double* QUARTAN. Sp. I. var. 1. D.

156 Quartana duplex, Sauv. sp. 3. Vog. sp. 13.

In the double quartan, the fits come on every day except the third; but so that the first paroxysm answers to the third, the second to the fourth, and so on.

The *Triple* QUARTAN. Sp. I. var. 1. E.

Quartana triplex, Sauv. sp. 5. Vog. sp. 14. Bartholin. H. anat. c. 1. 95.

This comes on every day, but the quartan type is still preserved by the times of accession; that is, the time of the fourth paroxysm's coming on answers to that of the first, the fifth to the second, the sixth to the third, &c.

The QUARTAN, accompanied with *Symptoms* of other diseases. Sp. I. var. 2.

Quartana cataleptica, Sauv. sp. 7. Bonet. polyalth. vol. 1. p. 805. 158

Quartana comatosa, Sauv. sp. 15. Werholf. de febr. C. Pisonis Observ. de morbis a colluvie ferof. obs. 166, 167, 168, 169, 171, 172, 173, 174.

Quartana epileptica, Sauv. sp. 8. Scholzii Conf. 379, 380.

Quartana hysterica, Sauv. sp. 10. Morton, Pyret. exerc. 1. cap. ix. H. 10, 11.

Quartana nephralgica, Sauv. sp. 9.

Quartana metastatica, Sauv. sp. 17.

Quartana amens, Sauv. sp. 12. Sydenham de morb. acut. cap. v.

Quartana splenetica, Sauv. sp. 2. Etmuller, Coll. consult. cas. 25.

The QUARTAN complicated with other Diseases. Sp. I. var. 3.

Quartana syphilitica, Sauv. sp. 6. Plateri, observ. L. III. p. 676. Edin. Ess. art. xlvii. obs. 8. 159

Quartana arthritica, Sauv. sp. 11. Musgr. de Arthr. sympt. cap. ix. H. 4. et 5.

Arthritis febrilequa, Sauv. sp. 10.

Arthritis febricosa, Sauv. sp. 10. Werholf. de febr. Cockburn de morbis navigantium, obs. 19.

Quartana scorbutica, Sauv. sp. 14. Barthol. de med. Dan. diss. iv. Tim. L. VIII. cas. 18.

The *Remitting* QUARTAN. Sp. II.

Tetartophya, Sauv. gen. 85. Sag. 699. Lin. 21. 160

Quartana remittens auctorum.

Var. 1. Tetartophya simplex, Sauv. sp. 1.

2. Amphimerina femiquartana, Sauv. sp. 23.

3. Tetartophya semitertiana, Sauv. sp. 5.

4. Tetartophya maligna, Sauv. sp. 6. Lautter. Hist. med. cas. 21. M. Donat. L. III. cap. 14. ex M. Gatendaria Horst. L. I. obs. 15.

5. Tetartophya carotica, Sauv. sp. 4. Werholf. de febr. Bianchi Hist. hep. pars III. const. ann. 1718, p. 751.

6. Tetartophya splenalgica, Sauv. sp. 2.

7. Tetartophya, hepatalgica, Sauv. 3. Car. Pif. in prefat. p. 33.

8. Amphimerina spasmodica, Sauv. sp. 16.

To the tertian or quartan fevers also belong the *Erratica* of authors. As all those above mentioned differ only in the slight circumstance of the type from the intermitting and remitting tertians already described at length, it is unnecessary here to take up time in describing every minute circumstance related by physicians concerning them, especially as it could contribute nothing towards the laying down a better method of cure than what hath been already suggested.

GENUS

GENUS III. QUOTIDIANA; the QUOTIDIAN FEVER.

Quotidiana auctorum, *Sauv.* gen. 86. *Lin.* 15.
Vog. I. *Hoffm.* II. 33. *Junck.* tab. 79.

161

The *Genuine* QUOTIDIAN. Sp. I. var. I. A.

Quotidiana simplex, *Sauv.* sp. 1.

Quotidiana legitima, *Sennert.* de febr. cap. 18.

Description. This kind of fever generally comes on about six or seven o'clock in the morning, beginning with a considerable degree of cold and shivering, which lasts for about an hour; and is often accompanied with vomiting, or spontaneous diarrhoea, or both. It is succeeded by a pretty strong heat, accompanied with thirst, restlessness, and pain of the head. When the heat abates a little, a spontaneous sweat commonly follows, and the whole paroxysm rarely exceeds six hours. It returns, however, every day almost always at the same hour, unless it be evidently disturbed.

Causes of, and persons subject to, the disease. The same general causes are to be assigned for the quotidian as for other intermittents. This kind occurs but rarely; and is said to attack people of a phlegmatic temperament rather than any other: also old people rather than young, and women rather than men.

The prognosis and method of cure are not different from those of tertians and quartans.

The *Partial* QUOTIDIAN. Sp. I. var. I. B.

162

Quotidiana partialis, *Sauv.* sp. 16. *Cnoffel*, E. N. C.

D. I. A. III. obs. 205. *Edin. Med. Ess.* vol. i. art. 31. vol. ii. art. 16.

Quotidiana cephalalgica, *Sauv.* sp. 6. *Mort.* pyretol. exerc. i. hist. 27. *Van Swieten* in *Boerb.* p. 534.

Cephalalgia intermittens, *Sauv.* sp. 7.

Cephalæa febricosa, *Sauv.* sp. 4.

Quotidiana ophthalmica, *Morton*, *ibid.* hist. 17. *Van Swieten*, *ibid.*

Ophthalmia febricosa, *Sauv.* sp. 23.

These distempers attack only some particular part of the body, as the head, the eye, arm, &c. producing periodical affections of those parts returning once in 24 hours; and are to be cured by the bark, as other intermittents. They are known to belong to this class, by the evident intermission of the pain or other affection of the part. The *quotidiana hysterica*, *Sauv.* sp. 3. *quotidiana catarrhalis*, *Sauv.* sp. 9, and *quotidiana stranguriosa*, *Sauv.* sp. 11. seem to be symptomatic disorders.

The *Remitting* QUOTIDIAN. Sp. II.

163

Amphimerina, *Sauv.* gen. 84. *Lin.* 20.

Quotidiana continua, *Vog.* 15.

Quotidianæ remittentes et continuæ auctorum.

Amphimerina latica, *Sauv.* sp. 1.

Febris continua lymphatica, *Etmuller*, *Coll. conf.* cal. 32. *River.* *Obs.* cent. i. obs. 57.

Amphimerina singultuosa, *Sauv.* sp. 14.

Febris continua Lyngodes, *Vog.* 26.

Concerning these also nothing remains necessary to be mentioned in this place, having already so fully discussed the remitting fevers in all the different parts of the world. Many other varieties of these fevers mentioned by different authors are to be accounted merely symptomatic.

SECT. II. CONTINUED FEVERS.

Continuæ, *Sauv.* class. ii. ord. 1. *Vog.* class. I. ord. 2. *Sag.* 666. *Boerb.* 727.

Continentes, *Lin.* class. ii. ord. 1. *Stahl.* *Cal.* mag. 35. *Cal.* min. 87. *Junck.* 58. *Sennert.* de febr. L. ii. cap. 2. et 10.

GENUS IV. SYNOCHA.

Synocha, *Sauv.* gen. 80. *Lin.* 12. *Junck.* 58.

Synocha, five febris acuta sanguinea, *Hoffm.* II. 105.

Synochus, *Vog.* 16.

Continua non putris, *Boerb.* 720.

Ephamera, *Sauv.* g. 79. *Boerb.* 728. *Junck.* 57.

Diaria, *Lin.* 11.

Febris inflammatoria auctorum.

Description. The most simple kind of synocha is the ephamera or diary fever. It begins without any sensation of cold or shivering, unless there be some internal inflammation, or the small-pox or measles happen to be present. A continual heat without any intermission constitutes the essence of this disease. The heat, however, is more tolerable than in the synocha properly so called. In some the pains of the head are pungent and throbbing, answering to the pulsations of the arteries; but in others they are dull and heavy. The face is red and bloated; and there is a remarkable lassitude of the limbs, with a strong, full, and frequent pulse. The urine is red, and deposits a sediment almost of the colour of orange-peel; and in the very first day of the disease, signs of concoction (according to the Hippocratic phrase) appear. The fever commonly goes off with a gentle sweat, but sometimes, though more rarely, with an hemorrhagy of the nose. Its shortest period is 24 hours; but if it goes beyond the fourth day, it is then a *synocha* properly so called.

The simple synocha, according to Vogel, begins with cold and shivering, succeeded by vehement heat, redness, and dryness of the skin. The face, especially, is very red, and the thirst intense. The head is either pained or heavy. The patient either doth not sleep at all, or is disturbed with dreams. A moist sweat then breaks out all over the skin. The pulse is full, quick, and frequent; the judgment is sometimes a little disturbed: young people are apt to be terrified with imaginations; and they for the most part incline to sleep: the respiration is difficult, and the belly costive; at the same time that a tensive kind of lassitude is perceived over the whole body. A complete crisis takes place either on the fourth or at the farthest on the eleventh day. The characteristic marks of the simple synochus, therefore, are, A redness of the face, moisture of the skin, a strong and frequent pulse.

Causes of, and persons subject to, this disease. As we have already remarked of intermittents, so must we also now remark of continued fevers, that it is impossible to discover those minute causes which occasion the difference of type betwixt one inflammatory fever and another, though most authors pretend to enumerate these with great certainty. Thus Juncker tells us, that the cause of the simple ephamera is plethora, together with any immoderate agitation and commotion of the fluids while in that state. Vogel reckons among the causes of his *febris diaria*, passions of the mind, pain, want, exposure to the sun, &c.; a repulsion or absorption

Febres of certain humours; wounds, fractures, luxations, &c.; so that in general we may reckon every thing tending to increase the action of the arterial system to be in certain circumstances a cause of inflammatory fever.—Hence we find those are most subject to the synocha whose constitution is either naturally robust, or who are exposed to those causes which tend to produce an increased action of the arterial system; such as hard labour, high living, &c.

Prognosis. The most simple kind of synocha, that is, the ephemera or diary fever, is commonly cured without the assistance of medicine, and therefore the prognosis is for the most part favourable: yet, if it be improperly treated by heating medicines, it may easily be converted into the other kind; or, if there be a putrid disposition of the fluids, into a fever of a very dangerous nature. The same thing is to be understood even of the most violent kind; for simple inflammatory fevers are not dangerous unless complicated with an affection of some particular part, as the pleura, stomach, &c.

Cure. Dr Cullen objects to the plan of those who are for leaving the cure of continued fevers to the operations of nature; because these operations are neither certain in themselves, nor are they so well understood as to enable us to regulate them properly; and it is likewise possible to supersede them by art. The plan therefore on which he proceeds is, to form his indications of cure upon the means of obviating the tendency to death in fevers; and these he reduces to three. 1. To moderate the violence of re-action.—2. To remove or obviate the causes of debility; and, 3. To obviate or correct the tendency of the fluids to putrefaction.

The *first* indication may be answered, 1. By all those means which diminish the action of the heart and arteries. 2. By those which take off the spasm of the extreme vessels, which, according to his theory, is the chief cause of violent re-action.

I. The action of the heart and arteries may be diminished, 1. By avoiding or moderating those irritations which, in one degree or other, are almost constantly applied to the body. 2. By the use of certain sedative powers. 3. By diminishing the tension or tone of the arterial system.

[1.] The irritations above-mentioned are the impressions made upon our senses, the exercise of the body and mind, and the taking in of aliments. The avoiding of these as much as possible, or the moderating their force, makes what is properly called the *antiphlogistic regimen*, proper to be employed in *almost* every continued fever. This regimen is to be directed in the following manner.

1. Impressions on the external senses, as stimulant to the system, and a chief support of its activity, should be avoided as much as possible; especially such as are of a stronger kind, and which give pain and uneasiness. No impression is to be more carefully guarded against than that of external heat; and at the same time every other means of increasing the heat of the body is to be shunned. Both these precautions are to be taken as soon as a hot stage is fully formed, and to be attended to during its continuance, except in certain cases, where a determination to sweating is necessary, or where the stimulant effects of heat may

be compensated by circumstances which determine it to produce a relaxation and revulsion. **Synocha.**

2. All motion of the body is to be avoided as much as possible, and that posture only chosen which employs the fewest muscles, and keeps none of them long in a state of contraction. Speaking, as it accelerates respiration, is particularly to be avoided. It must also be observed, that every motion of the body is more stimulant in proportion as the patient is weaker.

3. The exercise of the mind is also to be avoided, as being a stimulus to the body; but here an exception is to be made in the case of a delirium coming on, when the presenting of accustomed objects may divert the irregular train of ideas then arising in the mind.

4. The presence of recent aliment in the stomach proves always a stimulus to the system, and ought therefore to be as moderate as possible. A total abstinence for some time may be of service; but as this cannot be long continued with safety, we must avoid the stimulus of aliment by choosing that kind which gives the least. Alimentary matters are also to be accounted more stimulant in proportion to their alkalescent qualities; and this leads us to avoid all animal, and use only vegetable food. For the same reason, aromatic and spirituous liquors are to be avoided; and in answering the present indication, we must abstain from all fermented liquors except those of the lowest quality. Other stimuli are, the sensation of thirst, crudities or corrupted humours in the stomach, a preternatural retention of the feces in the intestines, and a general acrimony of all the humours, which is in most fevers to be suspected. These are to be removed by such methods as the urgency of the symptoms require, by diluting liquors, vomiting, the use of acids, laxative clysters, and large quantities of antiseptic drinks.

[2.] The second method of moderating the violence of reaction is by the employment of certain sedative powers, with a view to diminish the activity of the whole body, and particularly that of the sanguiferous system. The first of these to be mentioned is the application of cold. Heat is the chief support of the activity of the animal-system; and the system is therefore provided with a power of generating heat in itself: but at the same time we may observe, that this would go to excess, were it not constantly moderated by a cooler temperature in the surrounding atmosphere. When, therefore, the generating power of heat in the system is increased, as is commonly the case in fevers, it is necessary not only to avoid all further means of increasing it, but also to apply air of a cooler temperature; or at least to apply it more entirely and freely than in a state of health. This is shown, from some late observations, to be a very powerful means of moderating the violence of reaction; but what is the mode of its operation, to what circumstances of fever it particularly applies, or what limitations it requires, are not yet fully ascertained.

Another sedative power very frequently employed in fevers, is that of certain medicines known in the materia medica by the name of *refrigerants*. The chief of these are acids of all kinds when sufficiently diluted, and which are, in several respects, remedies adapted to continued fevers. Those especially in use

are

Fevres

are the vitriolic and vegetable; and on many accounts the latter are to be preferred. Another set of refrigerants are the neutral salts formed of the vitriolic, nitrous, or vegetable acids, with alkalies either fixed or volatile. All these neutrals, while they are dissolved in water, generate cold; but as that cold ceases soon after the dissolution is finished, and as the salts are generally exhibited in a dissolved state, their refrigerant power in the animal body does not all depend upon their power of generating cold with water. Nitre is the refrigerant chiefly employed; but all the others, compounded as above mentioned, partake more or less of the same quality. Besides these neutrals, some metallic salts have also been employed in fevers, particularly the sugar of lead: but the refrigerant powers of this salt are by no means ascertained, and its deliterious qualities are too well known to admit of its being freely used.

[3.] The third general method of diminishing the reaction of the system, is by lessening the tension, tone, and activity of the sanguiferous system. As the activity of the system in a great measure depends upon the tone, and this again upon the tension, of the vessels, given to them by the quantity of fluids they contain, it is evident, that the diminution of the quantity of these must diminish the activity of the sanguiferous system. The most efficacious means of diminishing the quantity of fluids is by the evacuations of blood-letting and purging. The former is evidently one of the most powerful means of diminishing the activity of the whole body, and especially of the sanguiferous system; and it must therefore be the most effectual means of moderating the reaction in fevers. When the violence of reaction, and its constant attendant a phlogistic diathesis, are sufficiently evident; when these constitute the principal part of the disease, and may be expected to continue through the whole of it, as in the cases of synocha; then blood-letting is the principal remedy, and may be employed as far as the symptoms of the disease may seem to require, and the constitution of the patient will bear. It must, however, be remarked, that a greater evacuation than is necessary may occasion a slower recovery, and render the person more liable to a relapse, or bring on other diseases. It is also to be observed, that this evacuation is the more effectual, as the blood is more suddenly drawn off, and as the body is at the same time more free from all irritation, and therefore when it is in a posture in which the fewest muscles are in action.

With regard to purging, when we consider the quantity of fluids constantly present in the cavity of the intestines, and the quantity which may be drawn off from the innumerable excretories that open into this cavity, it will be obvious, that a very great evacuation may be made in this way; and if this be done by a stimulus that is not at the same time communicated to the rest of the body, it may, by emptying both the cavity of the intestines and the arteries which furnish the excretions poured into it, induce a considerable relaxation in the whole system; and is therefore suited to moderate the violence of reaction in fevers. But it is to be observed, that as the fluid drawn from the excretories opening into the intestines is not all drawn immediately from the arteries, and as what

is even more immediately drawn from these is drawn off slowly; so the evacuation will not, in proportion to its quantity, occasion such a sudden depletion of the red vessels as blood-letting does; and therefore cannot act so powerfully in taking off the phlogistic diathesis of the system.

At the same time the evacuation may induce a considerable degree of debility; and therefore, in those cases in which a dangerous state of debility is likely to occur, purging is to be employed with a great deal of caution; and this caution is more difficult to be observed than in the case of blood-letting: and it is further to be noticed, that as purging takes off in some measure the determination of the blood to the vessels on the surface of the body, it seems to be an evacuation not well adapted to the cure of fevers.

II. The other method of moderating the violence of reaction in fevers is by the exhibition of those remedies suited to take off the spasm of the extreme vessels, supposed to be the irritation which chiefly supports the reaction. The means to be employed for this purpose are either internal or external.

First, The internal means are, 1. Those which determine the force of the circulation to the extreme vessels on the surface of the body, and, by restoring the tone and activity of these vessels, overcome the spasm on their extremities. 2. Those medicines which have the power of taking off spasm in any part of the system, and which are known under the title of ANTI-SPASMODICS.

(1.) Those remedies which are fit to determine to the surface of the body are, 1. Diluents. 2. Neutral salts. 3. Sudorifics. 4. Emetics.

1. Water enters, in a large proportion, into the composition of all the animal fluids, and a large quantity of it is always diffused through the whole of the common mass. In a sound state, the fluidity of the whole mass depends upon the quantity of water present in it. Water therefore is the proper diluent of our mass of blood, and other fluids are diluent only in proportion to the quantity of water they contain.

In a healthy state, also, the fulness of the extreme vessels and the quantity of excretion are in proportion to the quantity of water present in the body. But in fever, though the excretions be in some measure interrupted, they continue in such quantity as to exhale the more fluid parts of the blood; and, while a portion of them is at the same time necessarily retained in the larger vessels, the smaller, and the extreme vessels, both from the deficiency of fluid and their own contracted state, are less filled, and therefore allowed to remain in that condition. To remedy this contracted state, nothing is more necessary than a large supply of water or watery fluids taken in by drinking or otherwise; for as any superfluous quantity of water is forced off by the several excretories, such a force applied may be a means of dilating the extreme vessels, and of overcoming the spasm affecting their extremities. Accordingly, the throwing in of a large quantity of watery fluids has been, at all times, a remedy much employed in fevers; and in no instance more remarkably than by the Spanish and Italian physicians, in the use of what they call the *dieta aquea*. This practice consists in taking away every other kind of aliment and drink, and in giving, in divided portions, every

Synocha.

Febres

every day for several days together, six or eight pounds of plain water, generally cold, but sometimes warm. All this, however, is to be done only after the disease has continued for some time, and at least for a week.

2. A second means of determining to the surface of the body, is by the use of neutral salts. These neutrals, in a certain dose, taken into the stomach, produce soon after a sense of heat upon the surface of the body; and, if the body be covered close and kept warm, a sweat is readily brought out. The same medicines taken during the cold stage of a fever, very often put an end to it, and bring on the hot one; and they are also remarkable for stopping the vomiting which so frequently attends the cold stage of fevers. All this shows, that neutral salts have a power of determining the blood to the surface of the body, and may therefore be of use in taking off the spasm which subsists there in fevers. The neutral most commonly employed in fevers, is that formed of an alkali with the native acid of vegetables. But all the other neutrals have more or less of the same virtue; and perhaps some of them, particularly the ammoniacal salts, possess it in a stronger degree. As cold water taken into the stomach often shows the same diaphoretic effects with the neutral salts, it is probable that the effect of the latter depends upon their refrigerant powers.

3. A third method of determining to the surface of the body, and taking off the spasm subsisting there, is by the use of sudorifics and of sweating. The propriety of this remedy has been much disputed; and many specious arguments may be adduced both for and against the practice. In its favour may be urged, 1. That in healthy persons, in every case of increased action of the heart and arteries, a sweating takes place, and is, seemingly, the means of preventing the bad effects of such increased action. 2. That, in fevers, their most usual solution and termination is by spontaneous sweating. 3. That, even when excited by art, it has been found useful at certain periods, and in certain species of fever.—On the other hand, it may be urged against the practice of sweating, 1. That in fevers, as a spontaneous sweating does not immediately come on, there are some circumstances different from those in the state of health, and which may render it doubtful whether the sweating can be safely excited by art. 2. That in many cases the practice has been attended with bad consequences. The means commonly employed have a tendency to produce an inflammatory diathesis; which, if not taken off by the sweat succeeding, must be increased with much danger. Thus sweating employed to prevent the accessions of intermitting fevers has often changed them into a continued form, which is always dangerous. 3. The utility of the practice is doubtful, as sweating, when it happens, does not always give a final determination, as must be manifest in the case of intermittents, and in many continued fevers which are sometimes in the beginning attended with sweatings which do not prove final; and, on the contrary, whether they be spontaneous or excited by art, they seem often to aggravate the disease.

From these considerations, it is doubtful if the practice of sweating can be admitted very generally; but, at the same time, it is also very doubtful if the failure

VOL. XI. Part I.

of the practice, or the mischiefs said to arise from it, have not been owing to the improper conduct of the practitioner. With respect to the last, it is almost agreed among physicians, 1. That sweating has been generally hurtful when excited by stimulant, heating, and inflammatory medicines. 2. That it has been hurtful when excited by much external heat, and continued with a great increase of the heat of the body. 3. That it is always hurtful when it does not relieve; and rather increases the frequency and hardness of the pulse, the anxiety and difficulty of breathing, the headach, and delirium. 4. That it is always hurtful if it be urged when the sweat is not fluid, and when it is partial and on the superior parts of the body only.

In these cases, it is probable, that either an inflammatory diathesis is produced, which increases the spasm on the extreme vessels; or that, from other causes, the spasm is too much fixed to yield easily to the increased action of the heart and arteries; and upon either supposition it must be obvious, that urging the sweat may produce determinations to some of the internal parts, with very great danger.

Notwithstanding these doubts, however, it still remains true, 1. That sweating has been often useful in preventing the accessions of fevers when they have been certainly foreseen, and a proper conduct employed. 2. That even after fevers have in some measure come on, sweating has interrupted their progress when properly employed, either at the very beginning of the disease, or during its approach and gradual formation. 3. That even after pyrexia have continued for some time, sweating has been successfully employed in curing them, as is particularly exemplified in the case of a rheumatism. 4. That certain fevers produced by a very powerful sedative contagion, have been generally treated most successfully by sweating.

These instances are in favour of sweating, but give no general rule; and it must be left to farther experience to determine how far any general rule can be established in this matter. In the mean time, if the practice of sweating is to be attempted, the following rules may be laid down for the conduct of it. 1. That a sweat should be excited without the use of stimulant inflammatory medicines. 2. That it should be excited with as little external heat, and with as little increase of the heat of the body, as possible. 3. That, when excited, it should be continued for a due length of time; not less than 12 hours, and sometimes for 24 or 48 hours; always, however, supposing that it proceeds without the dangerous circumstances already mentioned. 4. That for some part of the time, and as long as the person can easily bear, it should be carried on without admitting of sleep. 5. That it should be rendered universal over the whole body; and therefore particularly that care should be taken to bring the sweating to the lower extremities. 6. That the practice should be rendered safer by moderate purging excited at the same time. 7. That it should not be suddenly checked by cold any how applied to the body.

When attention is to be given to these rules, the sweating may be excited, 1. By warm bathing, or a fomentation of the lower extremities. 2. By frequent draughts of tepid liquors, chiefly water, rendered more

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Synocha.

grateful by the addition of a light aromatic, or more powerful by that of a small quantity of wine. 3. By giving some doses of neutral salts. 4. Most effectually, and perhaps most safely, by a large dose of an opiate, joined with a portion of neutral salts, and of an emetic.

The fourth mean of determining to the surface of the body, and thereby taking off the spasm affecting the extreme vessels, is by the use of emetics. These, particularly of the antimonial kind, have been employed in the cure of fevers ever since the introduction of chemical medicines; and though of late their use has become very general, their efficacy is still disputed, and their manner of operating is differently explained.

Vomiting is in many respects useful in fevers; as it evacuates the contents of the stomach, as it emulges the biliary and pancreatic ducts, and evacuates the contents of the duodenum, and perhaps also of a larger portion of the intestines; as it agitates the whole of the abdominal viscera, it expedes the circulation in them, and promotes their several secretions; and lastly, as it agitates also the viscera of the thorax, it has like effects there.

It is not to this cause, however, that we are to impute the effect vomiting has in determining to the surface of the body. This must be attributed to the particular operation of emetics upon the muscular fibres of the stomach, whereby they excite the action of the extreme arteries on the surface of the body, and by this means effectually determine the blood to these vessels, remove the atony, and take off the spasm affecting them. For this purpose they are exhibited in two different ways; that is, either in such doses as may excite full and repeated vomitings, or in such doses as may excite sickness and nausea only, with little or no vomiting at all.

Full vomiting is well suited to determine to the surface of the body, and thereby to obviate the atony and spasm which lay the foundation of fever. Thus, vomiting excited a little before the expected accession of the paroxysm of an intermittent, has been found to prevent the paroxysm altogether. It has been observed also, that when contagion has been applied to a person, and first discovers its operation, a vomit given has prevented the fever which might otherwise have been expected.

These are the advantages to be obtained by exciting vomiting at the first approach of fevers, or of the paroxysm of fevers; and they may also be applied after fevers are formed, to take off, perhaps entirely, the atony and spasm, or at least to moderate these, so that the fever may proceed more gently and safely. It is seldom, however, that vomiting is found to produce a final solution of fevers; and after they are once formed, it is commonly necessary to repeat the vomiting several times; but this is attended with inconveniency, and sometimes with disadvantage. The operation of full vomiting is transitory, and the exercise of vomiting is a debilitating power; and therefore, when the vomiting does not remove the atony and spasm very entirely, it may give occasion to their recurrence with greater force. For these reasons, after fevers are fully formed, some physicians have thought proper to employ emetics in nauseating doses only. These are capable of exciting the action of the extreme vessels,

and their operation is more permanent. At the same time they often show their power by exciting some degree of sweat, and their operation is rendered more safe by their commonly producing some evacuation by stool. But nausea continued for any great length of time, is to most patients a sensation highly distressing, and almost insufferable.

The emetics chiefly in use at present are, ipecacuanha and antimony. The former may be employed for determining to the surface of the body: but, even in very small doses, it so readily excites vomiting, that it is with difficulty employed for the purpose of nauseating only; and in whatever manner employed, there is reason to suspect that its effects are less permanent, and less powerfully communicated from the stomach to the rest of the system, than those of antimony. This last is therefore generally preferred; and its preparations, seemingly various, may all be reduced to two heads; one comprehending those in which the reguline part is in a condition to be acted upon by acids, and therefore on meeting with acids in the stomach it becomes active; and another, comprehending those preparations in which the reguline part is already joined with an acid, rendering it active. Of each kind there are great numbers, but not differing essentially from one another; the two most worthy of notice are, the *calx nitrata antimonii* and *emetic tartar*, or *antimonium tartarizatum*, of the Edinburgh dispensatory. Both these are very efficacious medicines; but the latter seems preferable, because its dose is capable of being better ascertained; though the former, on account of its slower operation, may have some advantages, and in certain cases be more efficacious as a purgative and sudorific.

The *calx nitrata antimonii*, when first introduced into the pharmacopœia of the Edinburgh college, was supposed to be very nearly, if not precisely, the same with a medicine which has of late been highly celebrated in the cure of fevers, Dr James's powder. But from later and more accurate observations, there is now reason to believe that the *pulvis antimonialis* of the London pharmacopœia, formed by the calcination of antimony with hartshorn, approaches more nearly to that celebrated arcanum. But at any rate, the *calx antimonii nitrata*, the *pulvis antimonialis*, and James's powder, are probably not essentially different from each other. The two latter, however, have the most near resemblance; and accordingly the Edinburgh college in the last edition of their pharmacopœia have introduced an article under the title of *antimonium calcareo-phosphoratum*, which they consider as so much similar to James's powder, that they have used as a synonyme for it, the title of *pulvis Jacobi*.

The time most proper for exhibiting these medicines is a little before the accession, when that can be certainly known. In continued fevers the exacerbations are not always very observable; but there is reason to believe, that one commonly happens about noon or soon after it; and that these, therefore, are the most proper times for exhibiting emetics.

With respect to the manner of administration, that of the *calx nitrata* is simple, as the whole of what is thought a proper dose may be given at once; and no more can be properly given till the next accession. The administration of the emetic tartar is different. It is to be given in small doses, not sufficient to excite vomiting;

Febres miting; and these doses are to be repeated after short intervals for several times, till sickness, nausea, and some, though not much, vomiting come on. The difference of administration must depend upon the dose, and the length of the interval at which it is given. If it be intended that the medicine should certainly operate by stool, the doses are made small, and the intervals long. On the contrary, when vomiting is proper, or when much purging ought to be avoided, and therefore some vomiting must be admitted, the doses are made larger, and the intervals shorter. With respect to both kinds of preparations, the repetition is to be made at the times of accession, but not very often: for if the first exhibitions, duly managed, have little effect, it is seldom that the after exhibitions have much; and it sometimes happens that the repeated vomiting, and especially repeated purging, does harm by weakening the patient.

(2.) The other set of internal medicines which are supposed useful in taking off the spasm of the extreme vessels, are those named *antispasmodic*. But whatever may be the virtues of some of them in this way, such is their power of stimulating at the same time, that very few of them can with safety be administered in fevers of an inflammatory nature. Almost the only one which can with safety be exhibited in these cases is camphor; and the operations of this are by no means well ascertained. Dr Huxham mentions it as a corrector of the acrimony of cantharides; and assures us, that it very effectually promotes a diaphoresis. But from the remarks of other practitioners, we have no just reason to suppose that it acts perceptibly in a dose of five or six grains, though in 15 or 20 it produces a particular kind of intoxication:

Secondly, The external means suited to take off the spasm of the extreme vessels, are blistering and warm bathing.

1. What are the effects of blistering so frequently employed in fevers, is not yet agreed upon among physicians. Dr Cullen is of opinion, that the small quantity of cantharides absorbed from a blistering plaster, is not sufficient to change the consistence of the mass of blood; and therefore, that such a quantity can neither do good by resolving phlogistic lentor if it exists, nor do harm by increasing the dissolution of the blood arising from a putrid tendency in it. The effects of cantharides upon the fluids, therefore, may be entirely neglected. The inflammation produced by the application of cantharides to the skin, affords a certain proof of their stimulant power: but in many persons the effect of that stimulus is not considerable; in many it is not communicated to the whole system; and even when it does take place in the whole system, it seems to be taken off very entirely by the effusion and evacuation of serum from the blistered part. It may be concluded, therefore, that neither much good is to be expected, nor much harm to be apprehended, from the stimulant power of blistering; and the certainty of this conclusion is established by the great benefit arising from the proper practice of blistering in inflammatory diseases. Much has been imputed to the evacuation made by blistering; but it is never so considerable as to affect the whole system; and therefore can neither by a sudden depletion relax the sanguiferous system, nor by any

revulsion affect the general distribution of the fluids. The evacuation, however, is so considerable as to affect the neighbouring vessels; and the manifest utility of blistering near the part affected in inflammatory diseases leads us to think, that blistering, by deriving to the skin, and producing an effusion there, relaxes the spasm of the deeper seated vessels. It is in this manner, most probably, that the tumor of a joint, from an effusion into the cellular texture under the skin, takes off the rheumatic pain formerly affecting that joint. Analogous to this, probably, is the good effect of blistering in continued fevers; and arises from the relaxation of the spasm of the extreme vessels by a communication of the blistered part with the rest of the skin. A blister may be employed at any period in continued fevers; but it will be of most advantage in the advanced state of such fevers, when the reaction being weaker, all ambiguity from the stimulating power of blistering is removed, and when it may best concur with other circumstances tending to a final solution of the spasm.

From this view of the matter, it will appear, that the part of the body to which blisters ought to be applied is indifferent, except upon the suspicion of topical affection, when the blistering is to be made as near as possible to the part affected. Whether sinapisms and other *rubefacientia* act in a manner analogous to what has been supposed of blistering may be doubtful; but their effects in rheumatism and other inflammatory diseases render it probable.

2. The other external means of taking off the spasm of the extreme vessels is warm bathing. This was frequently, and in different circumstances, employed by the ancients; but has, till very lately, been neglected by modern physicians. As the heat of the bath stimulates the extreme vessels, and, with the concurrence of moisture, also relaxes them, it seems to be a safe stimulus, and well suited to take off the spasm affecting these vessels. It may be applied to the whole body by immersion; but this is in many respects inconvenient; and whether some of the inconveniences of immersion might not be avoided by a vapour-bath, is not yet determined by experience; but from extensive experience it appears, that most of the purposes of warm bathing can be obtained by a fomentation of the legs and feet, if properly administered, and continued for a due length of time, not less than an hour. The marks of the good effect of such a fomentation are, the patient's bearing it easily, its relieving delirium, and inducing sleep.

GENUS V. TYPHUS; the *Typhous FEVER*.
Typhus, *Sauv. Gen.* 82. *Sag.* 677.

165

I. Typhus mitior, or the *Slow Nervous FEVER*. Sp. I.
var. I.

166

Febris maligna hectica convulsiva, five lues *veupadns*,
Willis, de morb. convulsiv. cap. 8.

Febris pestilens, *Fracaflor*, de morb. contag. L. II.
cap. 4.

Febris pestilens sine caractere veneni, *Forest*, L. VI.
obs. 26.

Febris hectica pestilens, *Forest*, L. VI. obs. 32.

Febris nova ann. 1685, *Sydenham*, Sched. monitor.

Febris putrida nervosa, *Wintringh.* Com. Nosolog.
ad ann. 1720, 1721.

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Febris

Febres

Febris lenta nervosa, *Huxham* on fevers, chap. 8.Febris contagiosa, *Lind* on fevers and infection, *passim*.Typhus nervosus, *Sauv.* sp. 2.Typhus comatosus, *Sauv.* sp. 3.Tritæophya typhodes *Mangeti*, *Sauv.* sp. 11. *Raym.* *Fort. de febribus.*

Description. Of all the descriptions we have of the nervous fever, that of Dr Huxham is perhaps the best. According to him, the patient at first grows somewhat listless, and feels slight chills and shudders, with uncertain flushes of heat, and a kind of weariness all over, like what is felt after great fatigue. This is always attended with a sort of heaviness and dejection of spirit, and more or less of a load, pain, or giddiness of the head; a nausea and disrelish of every thing soon follows, without any considerable thirst, but frequently with urging to vomit, though little but insipid phlegm is brought up. Though a kind of lucid interval of several hours sometimes intervenes, yet the symptoms return with aggravation, especially towards night; the head grows more giddy or heavy; the heat greater; the pulse quicker, but weak; with an oppressive kind of breathing. A great torpor, or obtuse pain and coldness, affects the hinder-part of the head frequently, and oftentimes a heavy pain is felt on the top all along the *coronary suture*; this, and that of the back-part of the head, generally attend nervous fevers, and are commonly succeeded by some degree of a delirium. In this condition the patient often continues for five or six days, with a heavy, pale, sunk countenance; seemingly not very sick, and yet far from being well; restless, anxious, and commonly quite void of sleep, though sometimes very drowsy and heavy; but although he appears to those about him actually to sleep, he is utterly insensible of it, and denies that he doth so. The pulse during all this time is quick, weak, and unequal; sometimes fluttering, and sometimes for a few moments slow; nay, even intermitting, and then, with a sudden flush in the face, immediately very quick, and perhaps soon after surprisingly calm and equal; and thus alternately. The heats and chills are as uncertain and unequal; sometimes a sudden colour and glow arise in the cheeks, while the tip of the nose and ears is cold, and the forehead at the same time in a cold dewy sweat. Nay, it is very common, that a high colour and heat appear in the face, when the extremities are quite cold. The urine is commonly pale, and often limpid; frequently of a whey colour, or like vapid small-beer, in which there is either no manner of sediment, or a kind of loose matter like bran irregularly scattered up and down in it. The tongue at the beginning is seldom or never dry or discoloured, but sometimes covered with a thin whitish mucus: at length, indeed, it often appears very dry, red, and chapped, or of the colour of pomegranate-rind; but this mostly at the close of the disease: yet, however dry the tongue and lips seem, the patient scarce ever complains of thirst, though sometimes of a heat in the tongue. About the seventh or eighth day, the giddiness, pain, or heaviness of the head become much greater, with a constant noise in it, or *tinnitus aurium*; which is very disturbing to the sick, and frequently brings on a delirium. The load on the præcordia, anxiety and faint-

ness, grow much more urgent; and they often fall into an actual delirium, especially if they attempt to sit up; cold sweats suddenly come out on the forehead, and on the backs of the hands (though at the same time there is too much heat in the cheeks and palms), and as suddenly go off. If the urine now grows more pale and limpid, a delirium is certainly to be expected, with universal tremors and *subfultus tendinum*; the delirium is seldom violent, but as it were a confusion of thought and action, muttering continually to themselves, and faltering in their speech. Sometimes they awake only in a hurry and confusion, and presently recollect themselves, but forthwith fall into a muttering dozy state again. The tongue grows often very dry at the height, especially in its middle part, with a yellowish list on each side, and trembles greatly when the sick attempts to put it out. Frequently profuse sweats pour forth all at once, about the ninth, tenth, or twelfth day, commonly coldish and clammy on the extremities; oftentimes very thin stools are discharged, and then nature sinks apace; the extremities grow cold, the nails pale or livid; the pulse may be said to tremble and flutter, rather than to beat, the vibrations being so exceeding weak and quick that they can scarce be distinguished; though sometimes they creep on surprisingly slow, and very frequently intermit. The sick become quite insensible and stupid, scarce affected with the loudest noise or the strongest light; though, at the beginning, strangely susceptible of the impressions of either. The delirium now ends in a profound coma, and that soon in eternal sleep. The stools, urine, and tears, run off involuntarily, and denounce a speedy dissolution, as the vast tremblings and twitchings of the nerves and tendons are preludes to a general convulsion, which at once snaps off the thread of life. In one or other of these ways are the sick carried off, after having languished for 14, 18, or 20 days; nay, sometimes much longer. Most patients grow deaf and stupid towards the end of this disease, (some extremely deaf), though too quick and apprehensive at the beginning; insomuch that the least noise or light greatly offended them. Many from their immoderate fears seem to hurry themselves out of life, where little danger is apparent at the beginning: nay, some will not allow themselves to sleep, from a vain fear of dozing quite away; and others from the vast hurry, anxiety, and confusion they are sensible of either during sleep or at their waking.

Causes of, and persons subject to, the disorder. The nervous fever is most frequently the consequence of contagion. It most commonly attacks persons of weak nerves, a lax habit of body, and a poor thin blood; those who have suffered great evacuations, a long dejection of spirits, immoderate watchings, studies, fatigue, &c.; also those who have used much crude unwholesome food, vapid impure drinks, or who have been confined long in damp foul air; who have broken the vigour of their constitutions by salivations, too frequent purging, immoderate venery, &c. Hence we see how the disease is connected with an extreme debility of the nervous system; for, when people are prepared for this fever by having their nerves already weakened, the contagious particles immediately attack the nervous system, without

Typhus.

Febres out so much affecting the state of the blood or juices, though the latter are greatly affected in the putrid malignant fevers.

Prognosis. In nervous fevers, the prognosis is very much the same with that of the putrid malignant kind. And although death be not so frequent as in that modification of fever, yet it may justly be considered as a very fatal disease.

Cure. As this fever is produced by a contagion affecting the nervous system of a person already debilitated, and thus producing weakness in an extreme degree, we have now occasion to consider Dr Cullen's two indications of cure omitted under the *Synocha*; namely, to remove the cause and obviate the effects of debility, and to correct the putrescent tendency of the fluids; for though, in the beginning of nervous fevers, the tendency to putrefaction be not remarkable, it becomes exceedingly great towards their conclusion.

[1.] In answering the first indication, Dr Cullen observes, that most of the sedative powers inducing debility cease to act soon after they have been first applied; and therefore the removing them is not an object of the present indication. There is only one which may be supposed to continue to act for a long time, and that is the contagion applied; but we know nothing in the nature of contagion that can lead us to any measures for removing or correcting it. We know only its effects as a sedative power inducing debility, or as a ferment inducing a tendency to putrefaction in the fluids, the former of which at present falls under our consideration.—The debility induced in fevers by contagion, or other causes, appears especially in the weaker energy of the brain; but in what this consists, or how it may be restored, we do not well know; but as nature, seemingly for this purpose, excites the motion of the heart and arteries, we must ascribe the continuance of the debility to the weaker re-action of the sanguiferous system: the means, therefore, which we employ for obviating debility, are immediately directed to support and increase the action of the heart and arteries; and the remedies employed are tonics or stimulants.

In contagious diseases we know, both from the effects which appear, and from dissections, that the tone of the heart and arteries is considerably diminished; and that tonic remedies are therefore properly indicated. We are to consider these remedies as of two kinds; 1. The power of cold; 2. That of tonic medicines.

The power of cold as a tonic in fevers may be employed in two ways: either as thrown into the stomach, or as applied to the surface of the body. As we have already observed that the power of cold may be communicated from any one part to every other part of the system, so it will be readily allowed that the stomach is a part as fit as any other for this communication, and that cold drink taken into the stomach may prove an useful tonic in fevers.—This the experience of all ages has confirmed; but at the same time it has been frequently observed, that, in certain circumstances, cold drink taken into the stomach has proved very hurtful; and therefore that its use in fevers requires some limitations. What these limitations should be, and what are all the circumstances which may forbid the use of

cold drink, it is difficult to determine; but it seems clearly forbidden in all cases where a phlogistic diathesis prevails in the system; and more especially when there are topical affections of an inflammatory nature.

The other method of employing cold as a tonic, is by applying it to the surface of the body, as a refrigerant power fit to moderate the violence of reaction; but probably it may here also be considered properly as a tonic, and useful in cases of debility.—Not only cool air, but cold water also may be applied to the surface of the body as a tonic. The ancients frequently applied it with advantage to particular parts as a tonic; but it is a discovery of modern times, that, in the case of putrid fevers attended with much debility, the body may be washed all over with cold water. This was first practised at Breslaw in Silesia, as appears from a dissertation under the title of *Epidemia Verna, quæ Wratislaviam anno 1737 afflixit*, to be found in the *Acta Nat. Curios.* vol. x. And from other writers it appears, that the practice has passed into some of the neighbouring countries; but in this island it does not appear that we have yet had any experience of it.

The medicines which have been employed in fevers as tonics are various. If the *saccharum saturni* hath been found useful, it is probably as a tonic rather than as a refrigerant; and the *ens veneris*, or other preparations of iron which have been employed, can act as tonics only. The preparations of copper, from their effects in epilepsy, are presumed to possess a tonic power; but whether their use in fevers be founded on their tonic or emetic powers, is uncertain. And upon the whole there may no doubt occur some instances of fevers being cured by tonics taken from the fossil kingdom; but the vegetable tonics are the most efficacious, and among these the Peruvian bark certainly holds the first place.

The bark has commonly been considered as a specific, or a remedy of which the operation was not understood. We must observe, however, that, as in many cases the effects of the bark are perceived soon after its being taken into the stomach, and before it can possibly be conveyed to the mass of blood, we may conclude, that its effects do not arise from its operating on the fluids; and must therefore depend upon its operating on the nerves of the stomach, and being thereby communicated to the rest of the nervous system. This operation seems to be a tonic power, the bark being a remedy in many cases of debility, particularly in gangrene: and if its operation may be explained from its possessing a tonic power, we may easily perceive why it is improper when a phlogistic diathesis prevails; and from the same view we can ascertain in what cases of continued fever it may be admitted. These cases are either where considerable remissions have appeared, when it may be employed to prevent the return of exacerbations, on the same footing as it is used in intermitting fevers; or in the advanced state of fevers, when all suspicion of an inflammatory state is removed, and a general debility prevails in the system; and its being then employed is sufficiently agreeable to the present practice.

Another set of medicines to be employed for obviating debility and its effects, are the direct stimulants.

Febres **I**ants. These, in some measure, increase the tone of the moving fibres; but are different from the tonics, as they more directly excite and increase the action of the heart and arteries. This mode of their operation renders their use ambiguous; and when an inflammatory diathesis is present, the effects of the stimulants may be very hurtful; but it is still probable, that in the advanced state of these fevers, when debility prevails, they may be useful.

Of all the stimulants which may be properly employed, wine seems to be the most eligible. It has the advantage of being grateful to the palate and stomach, and of having its stimulant parts so much diluted, that it can be conveniently given in small doses; and therefore it may be employed with sufficient caution; but it is of little service unless taken pretty largely. — It may be suspected that wine has an operation analogous to that of opium; and on good grounds. But we can distinctly remark its stimulant power only; which renders its effects in the phrenitic delirium manifestly hurtful; and in the mild delirium depending on debility, as remarkably useful.

[2.] We must now proceed to the other indication of cure, namely, to correct or obviate the tendency in the fluids to putrefaction. This may be done, 1. By avoiding any new application of putrid or putrescent matter. 2. By evacuating the putrid or putrescent matter already present in the body. 3. By correcting the putrid or putrescent matter remaining in the body by diluents and antiseptics. 4. By supporting the tone of the vessels, and thereby resisting further putrefaction, or obviating its effects. 5. By moderating the violence of re-action, considered as a means of increasing putrefaction.

The further application of putrid or putrescent matter may be avoided, 1. By removing the patient from places filled with corrupted air. 2. By preventing the accumulation of the patient's own effluvia, by a constant ventilation, and by a frequent change of bed-clothes and body-linen. 3. By the careful and speedy removal of all excremental matters from the patient's chamber. 4. By avoiding animal-food.

The putrid or putrescent matter already present in the body, may be evacuated partly by frequent evacuations of the contents of the intestines; and more effectually still by supporting the excretions of perspiration and urine by the plentiful use of diluents. That which remains in the body may be rendered more mild and innocent by the use of diluents, or may be corrected by the use of antiseptics. These last are of many and various kinds; but which of them are conveniently applicable, or more particularly suited to the case of fevers, is not well ascertained. Those most certainly applicable and useful are acescent aliments, acids of all kinds, and neutral salts.

The progress of putrefaction may be considerably retarded, and its effects obviated, by supporting the tone of the vessels; and this may be done by tonic medicines, of which the chief are cold, and the Peruvian bark, as already mentioned. The violence of re-action increasing the tendency to putrefaction, may be moderated by the means already mentioned under *synocha*.

These are the proper indications to be observed in

the cure of the slow nervous fever. Dr Huxham ^{Typhus.} observes, that evacuations (especially bleeding) are improper even at the beginning. Even a common purgative given at this time hath been followed by surprising languors, syncope, and a train of other ill symptoms. However, it may sometimes be necessary to cleanse the stomach and primæ viæ by a gentle emetic, or a mild laxative. Indeed, where nausea, sickness, and load at stomach are urgent, as is frequently the case in the beginning of this fever, a vomit is necessary. Clysters of milk, sugar, and salt, may be injected with safety and advantage every second or third day, if nature wants to be prompted to stool. The temperate, cordial, diaphoretic medicines, are certainly, according to our author, most proper in these fevers; and a well-regulated, supporting, diluting diet is necessary. The latter of itself, judiciously managed, will go a great way in the cure, especially assisted by well-timed and well-applied blisters, and a due care to keep the patient as quiet as possible both in body and mind. But it should be noted, that any strong opiates are commonly very pernicious, however much the want of sleep and restlessness may seem to demand them. Mild diaphoretics, such as neutral draughts or elixir paregoricum, have much better effects; which, by raising a gentle easy sweat, or at least a plentiful perspiration, calm the hurry of the spirits, and a refreshing sleep ensues. Where the confusion and dejection of spirits are very considerable, blisters have been advised to be applied to the neck, occiput, or behind the ears; and during all this a free use of thin wine-whey, some pleasant ptisan or gruel, with a little soft wine, must be indulged. Indeed the patients, in this case, should drink frequently: though such quantities may not be necessary as in the ardent, or even putrid malignant fevers; yet they should be sufficient to carry on the work of dilution, support the sweats, and supply the blood with fresh and wholesome fluids, in place of that noxious matter which is continually passing off. In this view also a thin chicken-broth is of service, both as food and physic, especially towards the decline of the disease; and for the same reason thin jellies of hartshorn, sago, panada, are useful, adding a little wine to them, and the juice of Seville orange or lemon.

It is observable, that the sick are never so easy as when they are in a gentle sweat; for this soon removes the hurry of spirits, exacerbations of heat, &c. But profuse sweats should never be encouraged, much less attempted, by very strong heating medicines, especially in the beginning or advance of the fever; for they too much exhaust the vital powers, and are followed by a vast dejection of spirits, tremors, startings of the tendons, and sometimes end in rigors, cold clammy sweats, syncope, or a comatose disposition. Sometimes irregular partial heats and flushes succeed, with great anxiety, restlessness, delirium, difficulty of breathing, and a vast load and oppression in the præcordia, so as to incline the less cautious observer to think there may be something peripneumonic in it; but even here we must beware of bleeding, as the pulse will be found very small and unequal, tho' very quick. Nor is bleeding contra-indicated only by the weakness and fluttering

Febres fluttering of the pulse, but also by the pale, limpid, and watery urine which is commonly attendant. These symptoms denote the load, anxiety, and oppression on the præcordia to proceed from an affection of the nervous system, and not from a peripneumonic obstruction or inflammation. The breathing in this case, though thick and laborious, is not hot, but a kind of sighing or sobbing respiration, nor is there often any kind of cough concomitant; so that it has been conjectured to proceed from some spasm on the vitals. Here therefore the nervous cordial medicines are indicated, and blisters to the thighs, legs, or arms. Dr Huxham commonly used the following bolus and saline draught.

R. Pulv. contrayerv. comp. gr. xv.

Croc. Angl. gr. iij.

Confect. Ralegh. ℞j.

Syr. Croci q. s. M. f. Bolus.

R. Sal. C. C. ℞ss.

Succ. limon. ℥iij.

Aq. alexit. simpl. ℥iss. M. *Peraña effervescentia*, adde Sp. lavend. c. Syr. croc. ana ℥iss. M. f. Haust.

If great tremors and subsultus tendinum came on, he substituted half a scruple of musk instead of the contrayerva in the bolus, with advantage. One or other of these, or similar prescriptions, are to be taken every fifth, sixth, or eighth hour, and a temperate cordial julep may be now and then given out of thin wine or cyder whey, or, which is in many cases better, out of mustard-whey; which last is by no means a contemptible medicine. The saline draught made as above, is much more apt to pass through the pores of the skin than when made with salt of wormwood, which rather moves through the urinary passages.

The above-mentioned difficulty of breathing, anxiety, and oppression, many times precede a miliary eruption, which often appears on the seventh, ninth, or eleventh day of the fever, and sometimes later. Indeed great anxiety and oppression on the præcordia always precede pustular eruptions of any kind in all sorts of fevers. This eruption should be promoted by soft easy cordials and proper diluents; to which should be sometimes added some gentle aromatics. These tend to calm the universal uneasiness commonly complained of, and also very effectually promote a diaphoresis, or breathing kindly sweats, with which the miliary eruptions freely and easily advance. But however advantageous these commonly are, profuse sweats are seldom or never so, even though attended with a very large eruption. Two or three crops of these miliary pustules have been known to succeed one another, following profuse sweats, not only without advantage, but with great detriment to the patients, as they were thereby reduced to an extreme degree of weakness; so that they may justly be reckoned symptomatical rather than any thing else, and the consequent eruption is often merely the symptom of a symptom; for the miliary glands of the skin appear very turgid, and mimic a rash, after profuse sweating, even in the most healthy.

In these profuse colliquative sweatings a little generous red wine (diluted somewhat, if necessary) may be given with the greatest advantage; as it presently mo-

derates the sweats, supports the patient, and keeps up the miliary papulæ if they happen to attend. Towards the decline of the fever also, where the sweats are abundant and weakening, small doses of the tincture of the bark with saffron and snake-root were given with the greatest advantage, frequently interposing a dose of rhubarb to carry off the putrid colluvies in the first passages; which withal makes the remissions or intermissions that often happen in the decline of nervous diseases more distinct and manifest, and gives a fairer opportunity of throwing in the bark; for in the proper exhibition of this medicine we are to place our chief hope of curing both the nervous and putrid malignant fevers.

II. Typhus gravior, or the putrid, pestilential, or malignant FEVER. Sp. I. var. 2. 167

Febris pestilens, P. Sal. Divers. de febre pestilenti.

Febris pestilens Ægyptiorum, Alpin. de med. Ægypt. l. i. cap. 14.

Typhus Ægyptiacus, Sauv. sp. 6.

Febris pestilens maligna, Sennert. de febribus, l. iv. cap. 10.

Febris maligna pestilens, River, l. xvii. sect. iii. cap. 1.

Febris pestilens maligna, ann. 1643. Willis, de febribus, cap. 14.

Typhus carcerum, Sauv. sp. 1.

Febris nautica pestilentialis, Huxham de aëre ad ann. 1740.

Miliaris nautica, Sauv. sp. g.

Febris putrida contagiosa in carceribus genita, Huxham de aëre ad ann. 1742.

Miliaris purpurata, Sauv. sp. h.

Febris carcerum et nosocomiorum. Pringle, Diseases of the army, p. 294. Van Swieten, Maladies des armées, p. 136.

Typhus castrensis, Sauv. sp. 5.

Febris castrensis, quam vulgo cephalalgiam epidemicam vocant, Henr. Maii et A. Ph. Koph. Diff. apud Hallerum, tom. v.

Febris Hungarica sive castrensis, Juncker, 74. et plurium auctorum.

Febris castrensis Gallorum in Bohemia, ann. 1742. Scrinici. Diff. apud Haller. tom. v.

Febris petechialis, Sennert. l. iv. cap. 13. River. prax. l. xvii. sect. iii. cap. 1. Hoffm. II. p. 84.

Juncker. 73. Huxham on fevers, chap. 8. Ludwig. Inst. med. clin. n° 146. Schreiber von erkenntness, und cur der Krankheiten. p. 126. Monroe, Diseases of military hospitals, p. 1.

Febris catarrhalis maligna petechizans, Juncker, 72. Hoffm. II. 75. Eller de cogn. et cur. morb. sect. vi.

Febris quæ lenticulas, puncticula, aut peticulas vocant, Fracastorius de morb. contag. lib. ii. cap. 6.

Febris peticularis Tridenti, ann. 1591. Roboretus de febr. peticul.

Febris petechialis epidemica Colonix ann. 1672. Donckers, Idia febris petechialis.

Febris petechialis epidemica Posonii, 1683, C. F. Loeu in App. ad A. N. C. vol. ii.

Febris petechialis epidemica Mutinæ, 1692. Ramazzini. Const. Mutinensis, oper. p. 177.

Febris

Febris maligna petechizans, ann. 1698. *Hoffm.* II. p. 80.

Febris petechialis Wratislaviæ ann. 1699. *Helwich*, Ephem. Germ. D. III. A. VII. et VIII. obs. 132 p. 616.

Febris epidemia Lipsiæ 1718. *M. Adolph.* A. N. C. III. obs. 131. p. 296.

Febris endemica et epidemica Corcagiensis ann. 1708, 1718, et seq. *Rogers*, Essay on epidemic diseases.

Febris continua epidemica Corcagiensis ann. 1719. et seq. *M. O'Connel* Obs. de morbis.

Febris petechialis epidemica Cremonæ 1734. *Valcharengki* Med. ration. sect. 3.

Febris petechizans Petropoli 1735. *Weitbrecht.* Diff. apud Haller. tom. v.

Febris petechialis, ann. 1740, 1741, in Hassia, *Ritter.* A. N. C. vol. vii. obs. 4.

Febris maligna petechialis Rintelli 1741. *Furstenau.* A. N. C. vol. vii. obs. 5.

Febris petechialis epidemica Silesiæ 1741 et seq. *Bandhorst.* Diff. apud Haller. tom. v.

Febris petechialis epidemica Viennæ 1757. *Hase-nobrl.* Hist. med. cap. 2.

Febris petechialis epidemica Lipsiæ 1757. *Ludwig.* Adversar. tom. i. pars 1.

Febris petechialis epidemica variis Germaniæ locis ab. ann. 1755 ad 1761. *Strack* de morbo cum petechiis.

Description. This disease has been supposed to differ from the former in degree only; and there are many circumstances which would lead us to conclude, that both frequently originate from a contagion precisely of the same nature. In the same manner we see, during different seasons, and in different circumstances, various degrees of malignity in small-pox. Though every instance of the disease depends on the introduction of a peculiar and specific contagion into the body, yet this contagion in particular epidemics evidently possesses peculiar malignancy. The same is probably the case with the typhoid fever: But whether this observation be well founded or not, there cannot be a doubt that the typhus gravior or putrid fever is a disease of the most dangerous nature, as, besides the extreme debility of the nervous system, there is a rapid tendency of the fluids to putrefaction, which sometimes cuts off the patient in a few days, nay, in the warm climates, in 12 or 14 hours; or if the patient recovers, he is for a long time, even in this country, in an exceedingly weak state, and requires many weeks to recover his former health.

The putrid fevers, according to Huxham, make their attack with much more violence than the slow nervous ones; the rigors are sometimes very great, though sometimes scarce felt; the heats much sharper and permanent; yet, at first, sudden, transient, and remittent: the pulse more tense and hard, but commonly quick and small; though sometimes slow, and seemingly regular for a time, and then fluttering and unequal. The head-ach, nausea, and vomiting, are much more considerable even from the beginning. Sometimes a severe fixed pain is felt in one or both temples, or over one or both eye-brows; frequently in the

bottom of the orbits of the eyes. The eyes always appear very dull, heavy, yellowish, and very often a little inflamed. The countenance seems bloated, and more dead-coloured than usual. Commonly the temporal arteries throb much, and a tinnitus aurium is very troublesome: a strong vibration also of the carotid arteries frequently takes place in the advance of the fever, though the pulse at the wrist may be small, nay even slow: this is a certain sign of an impending delirium, and generally proceeds from some considerable obstructions in the brain.

The prostration of spirits, weakness, and faintness, are often surprisingly great and sudden, though no inordinate evacuation happens; and this too sometimes when the pulse seems tolerably strong. The respiration is most commonly laborious, and interrupted with a kind of sighing or sobbing, and the breath is hot and offensive.

Few or none of these fevers are without a sort of lumbago, or pain in the back and loins; always an universal weariness or soreness is felt, and often much pain in the limbs. Sometimes a great heat, load, and pain, affect the pit of the stomach, with perpetual vomiting of porraceous or black choler, and a most troublesome singultus; the matter discharged is frequently of a very nauseous smell. The tongue, though only white at the beginning, grows daily more dark and dry; sometimes of a shining livid colour, with a kind of dark bubble at top; sometimes exceeding black; and so continues for many days together; nor is the tinct to be got off many times for several days, even after a favourable crisis: at the height of the disease, it generally becomes very dry, stiff, and black, or of a dark pomegranate colour. Hence the speech is very inarticulate, and scarce intelligible. The thirst in the increase of the fever is commonly very great, sometimes unquenchable; and yet no kind of drink pleases, but all seem bitter and mawkish; at other times, however, no thirst is complained of, tho' the mouth and tongue are exceedingly foul and dry; this is always a dangerous symptom, and ends in a frenzy or coma. The lips and teeth, especially near the height, are furred up with a very black tenacious fordes. At the onset of the fever, the urine is often crude, pale, and vapid, but grows much higher-coloured in the advance, and frequently resembles a strong lixivium, or citrine urine, tinged with a small quantity of blood; it is without the least sediment or cloud, and so continues for many days together: by degrees it grows darker, like dead strong high-coloured beer, and smells very rank and offensive. In petechial fevers, the urine hath often been seen almost black and very fetid. The stools, especially near the height, or in the decline of the fever, are for the most part intolerably fetid, green, livid, or black, frequently with severe gripes and blood. When they are more yellow or brown, the less the danger; but the highest when they run off insensibly, whatever their colour may be. It is likewise a very bad symptom when the belly continues tense, swollen, and hard, after profuse stools; for this is generally the consequence of an inflammation or mortification of the intestines. A gentle diarrhoea is often very beneficial, and sometimes seems to be the only way which nature takes to carry off the morbid matter.

Febres

Typhus.

Sometimes black, livid, dun, or greenish spots appear, which always indicate a high degree of malignity; however, the more florid the spots are, the less danger is to be feared. It is also a good sign when the black or violet petechiæ become of a brighter colour. The large, black, or livid spots, are almost always attended with profuse hæmorrhagies; and the small, dusky, brown spots, like freckles, are not much less dangerous than the livid or black; though they are seldom accompanied with fluxes of blood: excessively profuse, cold, clammy sweats are often concomitant, by which also they sometimes vanish, though without any advantage to the patient. The eruption of the petechiæ is uncertain; sometimes they appear on the fourth or fifth day, though sometimes not till the eleventh, or even later. The *vibices*, or large dark, blue, or greenish marks, seldom appear till very near the fatal period. Frequently also we meet with an efflorescence like the measles in malignant fevers, but of a much more dull and livid hue; in which the skin, especially on the breast, appears as it were marbled or variegated. This in general is an ill symptom, and is often attended with fatal consequences.

Sometimes about the 11th or 14th day, on the occurrence of profuse sweats, the petechiæ disappear, and vast quantities of white miliary pustules break out. This is seldom found of any considerable advantage; but an itching, smarting, red rash, commonly gives great relief; and so do the large, fretting, watery bladders, which many times rise upon the back, breast, shoulders, &c. A scabby eruption likewise about the lips and nose is certainly one of the salutary symptoms; and the more hot and angry it is, so much the better. But of much more uncertain and dangerous event are the brown-coloured aphthæ; nor are those that are exceeding white and thick, like lard, of a very promising aspect. They are soon succeeded by great difficulty of swallowing, pain and ulceration of the fauces, œsophagus, &c. and with an incessant singultus: the whole *primæ viæ* become at last affected; a bloody dysentery comes on, followed by a sphacelation of the intestines; as is evident from the black, sanious, and bloody stools, extremely fetid and infectious. *Vibices*, or large, black, and bluish marks resembling bruises, are frequently seen towards the close of the fever; and, when attended with lividity and coldness of the extremities, are certain tokens of approaching death. In some cases, the blackness hath been known to reach almost to the elbows, and the hands have been dead-cold for a day or two before the death of the patient.

Such are the general appearances of the putrid malignant fever in this country, among those who enjoy a free air, and are not crowded together, or exposed to the causes of infection: but in jails, hospitals, or other places where the sick are crowded, and in some measure deprived of the benefit of the free air, the symptoms are, if possible, more terrible. Sir John Pringle, who had many opportunities of observing it, tells us, that the jail or hospital fever, in the beginning, is not easy to be distinguished from a common fever. The first symptoms are slight interchanges of heat and cold, a trembling of the hands, sometimes a sense of numbness in the arms, weakness of the limbs,

loss of appetite; and the disorder increasing towards night, the body grows hot, the sleep is interrupted, and not refreshing. With these symptoms, for the most part, there is some pain or confusion in the head; the pulse at first is a little quicker than natural, and the patients find themselves too much indisposed to go about business, though too well to be wholly confined. When the fever advances, the above-mentioned symptoms are in a higher degree; and in particular the patient complains of a lassitude, nausea, pains in his back, a more constant pain and confusion in his head, attended with an uncommon dejection of spirits. At this time the pulse is never sunk, but beats quick, and often varies in the same day both as to strength and fulness. It is little affected by bleeding once, if a moderate quantity of blood be taken away; but if the evacuation be large, and especially if it be repeated, to answer a false indication of inflammation, the pulse, increasing in frequency, is apt to sink in force, and often irrecoverably, whilst the patient becomes delirious. But withal we must observe, that, in every case, independent of evacuations, the pulse sooner or later sinks, and then gives certain intelligence of the nature of the disease. The appearance of the blood is various; for though it be commonly little altered, yet sometimes it will be fizy, not only on the first attack, but after the fever is formed. The worst appearance is when the crassamentum is dissolved; though this does not happen till the advanced state of the fever: though indeed this seems not easy to be ascertained, as blood has been so seldom taken away at that time. The urine is also various. Sometimes it is of a reddish or flame colour, which it preserves a long time; but it is oftener pale, and changes from time to time in colour as well as crudity, being sometimes clear, sometimes clouded: towards the end, upon a favourable crisis, it becomes thick, but does not always deposit a sediment. If the sick lie warm, and have had no preceding flux, the belly is generally bound; but when they lie cold, as they often do in field-hospitals, the pores of the skin being shut, a diarrhœa is a common symptom, but is not critical. In the worst cases, a flux appears in the last stage; then the stools are involuntary, colliquative, ichorous, or bloody, and have a cadaverous smell; the effects of a mortification of the bowels, and the signs of approaching death. When the hospitals are filled with dysenteric patients, some of the nurses will be infected with the flux only, and others with this fever, ending in these bloody and gangrenous stools.

In the beginning the heat is moderate; and even in the advanced state, on first touching the skin, it seems inconsiderable; but upon feeling the pulse for some time, we are sensible of an uncommon ardour (the *calor mordicans*, as it has been called), leaving an unpleasant sensation on the fingers for a few minutes after. A day or two before death, if care be not taken, the extremities become cold, and the pulse is then hardly to be felt. The skin is generally dry and parched; though sometimes there are longer or shorter sweats, especially in the beginning. Such as are produced by medicine are of no use, except on the first attack, at which time they will often remove the fever; and natural sweats are never critical till the distemper begins to decline. These last are rarely

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profuse,

profuse, but gentle, continued, and equally diffused over the body: sometimes the disease will terminate by an almost imperceptible moisture of the skin; the sweats are usually fetid, and offensive even to the patient himself.

The tongue is commonly dry; and, without constant care of the nurse, becomes hard and brown, with deep chops: but this symptom is common to most fevers. At other times, though rarely, the tongue is soft and moist to the last, but with a mixture of a greenish or yellowish colour. The thirst is sometimes great, but more frequently moderate. In the advanced state, the breath is offensive, and a blackish furring gathers about the roots of the teeth.

Some are never delirious, but all lie under a stupor or confusion; few retain their senses till death: many lose them early, and from two causes; either from immoderate bleeding, or the premature use of warm and spirituous medicines. They rarely sleep; and, unless delirious, have more of a dejected and thoughtful look than what is commonly seen in other fevers. The face is late in acquiring either a ghastly or a very morbid appearance; yet the eyes are always muddy, and generally the white is of a reddish cast as if inflamed. The confusion of the head generally rises to a delirium, especially at night; but, unless by an unseasonable hot regimen, it seldom turns to rage, or to those high flights of imagination common in other fevers. When the delirium comes to that height, the face is flushed, the eyes red, the voice is quick, and the patient struggles to get up. But when that symptom is owing to large evacuations, or only to the advanced state of the disease, the face appears meagre; the eye-lids in slumbers are only half shut; and the voice, which is commonly low and slow, sinks to a degree scarce to be heard. From the beginning there is generally a great dejection and failure of strength. A tremor of the hands is more common than a starting of the tendons; or if the subfultus occurs, it is in a lesser degree than in many other fevers. In every stage of the disease, as the pulse sinks, the delirium and tremor increase; and in proportion as the pulse rises, the head and spirits are relieved. Sometimes in the beginning, but for the most part in the advanced state, the patient grows dull of hearing, and at last almost deaf. When the fever is protracted, with a slow and low voice, the sick have a particular craving for something cordial, and nothing is so cordial or so acceptable as wine. They long for no food, yet willingly take a little panada if wine be added. But such as are delirious, with a quick voice, wild looks, a subfultus tendinum, or violent actions, though their pulse be sunk, yet bear neither hot medicines, wine, nor the common cordials.

Vomiting, and complaints of a load and sickness at stomach, though usual symptoms, are not essential to the disease; nor are pleuritic stitches, difficulty in breathing, or flying pains, to be referred so much to it as to the constitution of the patient, or to a preceding cold.

A petechial efflorescence is a frequent, though not an inseparable, attendant of this fever. It sometimes appears of a brighter or paler red, at other times of a livid colour, but never rises above the skin. The spots are small; but generally so confluent, that at a little distance the skin appears only somewhat redder than or-

dinary, as if the colour was uniform; but upon a nearer inspection there are interstices seen. For the most part this eruption is so little conspicuous, that unless it be looked for attentively, it may escape notice. The spots appear thickest on the back and breast, less on the legs and arms, and Sir John Pringle never remembers to have seen any on the face. As to the time of their appearance, he agrees entirely with Dr Huxham. These spots are never critical, nor are they reckoned among the mortal symptoms; but only concur with other signs to ascertain the nature of the disease. The nearer they approach to purple, the more they are to be dreaded. In a few cases, instead of spots, purple streaks and blotches were observed. Sometimes the petechiae did not appear till after death; and there was one case in which, after bleeding, the petechiae were seen only on the arm below the ligature, and nowhere else on the skin.

The hospital fever, though accounted one of the continued kind, yet has generally some exacerbation at night, with a remission and often partial sweats in the day; and after a long continuance it is apt to change into a hectic, or an intermitting form. The length of the disease is uncertain. Sometimes it terminated either in death or recovery, in seven days after the patient took to his bed; but in the hospitals it generally continued from 14 to 20, and some died or recovered after four weeks. From the time of the sinking of the pulse until death or a favourable crisis, there is perhaps less change to be seen from day to day in this than in most other fevers. When its course is long, it sometimes terminates in suppurations of the parotid or axillary glands; and when these do not appear, it is probable that the fever is kept up by the formation of some internal abscess. The parotid glands themselves do not suppurate, but only some of the lymphatic glands that lie over them. Sir John Pringle observed one instance of a swelling of this kind on both sides, without any previous indisposition, when the person, not suspecting the cause, and applying discutient cataplasms, was, upon the tumor subsiding, seized with the hospital-fever. Many patients after the crisis of this fever complain of a pain in the limbs and want of rest; and almost all of them mention great weakness, confusion in their head, vertigo, and a noise in their ears.

Ten of the bodies of those who died of this distemper in Houghton's regiment were opened. In some, all the cavities were examined; in others, only the brain or the bowels. In some of them, the brain appeared to be suppurated. The first of this kind Sir John Pringle met with at Ghent; but the man being brought into the hospital from the barracks no earlier than two days before he died, he could only conjecture from the symptoms and the imperfect accounts he had of him, that his death was owing to a fever of this kind, after lingering near a month in it. About three ounces of purulent matter were found in the ventricles of the brain, and the whole cortical and medullary substance was uncommonly flaccid and tender; nay, some of the same kind of matter was found in the substance of the upper part of the cerebellum: yet this person, with some stupor and deafness, had his senses till the night before he died; so far, at least, that he answered distinctly when roused and spoken to; but about that

time

Febres time the muscles of his face began to be convulsed. Of two other instances of men who undoubtedly died of this fever, in one the cerebrum was suppurated, in the other the cerebellum. In the former case, the patient was under a stupor, with deafness from the beginning; but was never delirious, nor altogether insensible. His pulse sunk early; and about ten days before his death his head began to swell, and continued very large till within two days before he died, when it subsided a little. For several days before his end, he would taste nothing but cold water, and during his illness he lay constantly upon one side. The head being opened, an abscess as large as an egg was found in the substance of the forepart of the right hemisphere of the brain, full of thin matter like whey. At that time five more, ill of the same fever, had the like swelling of their heads, but recovered. In the other case, the abscess in the cerebellum was about the size of a small pigeon's egg, and contained also a thin ichorous matter: nor had this patient ever been so thoroughly insensible as not to answer reasonably when spoken to. Two days before he died his urine turned pale.

These suppurations, however, were not constant; for another who died about the same time, and had been ill about the same number of days with the like symptoms, the pale water excepted, had no abscess either in the brain or cerebellum. And two were opened afterwards, in whom the cortical substance of the brain had an inflammatory appearance, but no suppuration. In one of them the large intestines were corrupted: that man went off with a looseness; and just before he died, an ichorous matter was discharged from his nose. In the military hospital at Ipswich, one who unexpectedly died of this fever after having been seemingly in a fair way of recovery, had no suppuration in his brain; but in another, who died after an abscess in both orbits, the brain was found flaccid, and about two ounces of a thin serum in the ventricles.

Causes of, and persons subject to, this disorder. The cause of this fever, as well as that of the slow nervous fever, is an infection or contagion from some diseased animal-body, or from corrupted vegetables; and therefore is very little, if at all, different from those pestilential disorders which have arisen after battles, when great numbers of dead bodies were allowed to lie above ground, and infect the air with their effluvia. This is confirmed by an observation of Forestus, who was eye-witness to a distemper of this kind (which indeed he calls a *plague*) owing to the same cause, attended with buboes and a high degree of contagion. The same author also gives an account of a malignant fever breaking out at Egmont in North-Holland, occasioned by the rotting of a whale which had been left on the shore. We have a like observation of a fever affecting the crew of a French ship, by the putrefaction of some cattle which they had killed on the island of Nevis in the West Indies. These men were seized with a pain in their head and loins, great weakness, and a disorder of the stomach, accompanied with fever. Some had carbuncles; and on others purple spots appeared after death.

Galen assigns two causes for pestilential fevers:

1. The great heat of the weather, when the humours happen to be in a more putrescent state than usual.
2. A putrid state of the air, arising either from a multitude of dead bodies left unburied, as after a battle,

or from the evaporation of corrupted lakes and marshes.

Typhus

One of the most remarkable diseases incident to an army is related by Diodorus, as breaking out among the Carthaginians at the siege of Syracuse. That author not only relates some of its most distinguishing symptoms, but reasons well about its cause. He observes, that pains in the back and eruptions (*φλυκταιναι*) were common; that some had bloody stools; that others were seized with a delirium, so as to run about and beat all that came in their way; that the physicians knew no cure; and that it was the more fatal as the sick were abandoned by every body on account of the contagion. As to the cause, the author takes notice of the multitude of people confined within a narrow compass; of the situation of the camp in a low and wet ground; of the scorching heats in the middle of the day, succeeded by the cold and damp air from the marshes in the night-time; to these he adds, the putrid steams arising first from the marshes, and afterwards from the bodies of those who lay unburied.—This distemper seems to have been a compound of the marsh and pestilential fever.

Forestus remarks, that, from the putrefaction of the water only, the city of Delft, where he practised, was scarce ten years together free from the plague or some pestilential distemper. He adds, that the magistrates, upon his representation of the cause, erected a wind-mill for moving and refreshing the water. At that time Holland was much more subject to inundations and the stagnation of water than at present. In 1694, a fever broke out at Rochfort in France, which, on account of the uncommon symptoms and great mortality, was at first believed to be the plague. But M. Chirac, who was sent by the court to inquire into its nature, found the cause to arise from some marshes that had been made by an inundation of the sea; and observed, that the corrupted steams, which smelled like gun-powder, were carried to the town by the wind, which had long blown from that quarter. About two-thirds of those who were taken ill died. In such as were opened, the brain was found either inflamed or loaded with blood; the fibres of the body were uncommonly tender; and the bowels had either suppurated or were mortified.

It is needless to mention more instances of pestilential fevers being brought on by the steams of corrupted substances, whether animal or vegetable. In general it may be remarked, that the putrefaction of these substances in a dry air is more apt to bring on a fever of the continued form; but in a moist air hath a greater tendency to produce remitting fevers. But it must also be observed, that, even in cases where the most malignant fevers prevail, all persons are not equally disposed to receive the infection, though equally exposed to it with others. Some, through mere vigour of body and mind, cannot be infected with the most contagious diseases; while, on the other hand, those whose bodies are debilitated by a former disease, by study, low diet, or want, or those who have laboured under any of the depressing passions of the mind for some time, seldom or never escape. Men, therefore, who have been weakened by accidents (as those who have undergone a mercurial salivation) are very apt to fall into this distemper. Those who are taken into crowded hospitals, ill of the small-pox,

Febres

however good the sort may be, fall readily into this fever, and run a greater risk of dying of it than others. The second fever is attended with double danger, seeing the patient has been so much weakened by the first. A sure sign of the corruption of the air in an hospital is when many of the nurses fall sick.

Prognosis. In these fevers we cannot draw a prognostic from any symptom by itself; and perhaps all of them together are more fallible than in others. Generally the following are good: To have little delirium; the strength little impaired; turbid urine in the decline of the disease; and at that time a gentle sweat or moisture diffused over the body, or even the skin soft and the tongue moist; or to have some loose stools succeeded by a diaphoresis; the pulse to rise by wine or cordials, with an abatement of the stupor, tremor, and other affections of the brain. Deafness is rather a good sign. A sediment in the urine, without other changes to the better, is no sure sign of recovery; and some have recovered in whose water there was no sediment.—The bad signs are, a subsultus tendinum; the eyes much inflamed and staring; the speech quick, and the sound of the voice altered; a high delirium; perpetual watchfulness; constant sickness at the stomach, and vomitings; frequent stools, with a sinking pulse, and the disorder of the head increased; coldness of the extremities, and a tremulous motion of the tongue. It is observed to be among the worst signs when the patient complains of blindness; when he swallows with difficulty, or cannot put out his tongue when desired to do it; when he can lie on his back only, and pulls up his knees; or when insensible he endeavours to uncover his breast, or makes frequent attempts to get out of bed without assigning any reason. If to any of these are added ichorous, cadaverous, and involuntary stools, it is a sign of a mortification of the bowels and approaching death. It will not seem strange to find most of these prognostics common to the advanced state of other fevers, when we consider, that from whatever cause fevers begin, by a long continuance the humours are corrupted, and the brain and nerves affected much in the same manner as in those which arise from infection.

Prevention and cure. As distempers of the putrid kind never arise without an infection received from some quarter or other, the methods of prevention must evidently be reduced to two general heads. 1. To avoid receiving the infection into the body; and, 2. To put the body in such a situation as may enable it to resist the infection when received. On both these methods scarce any writer hath equalled Dr Lind of Haslar, whose opinions and directions therefore we shall give pretty fully.

As putrid diseases are very common and violent in the hot countries, it is very necessary for Europeans who visit these climates to be well informed, in the first place, of the signs of an unhealthy country, that they may be upon their guard as soon as they enter any foreign region. These signs are by our author enumerated as follows.

1. A sudden and great alteration in the air, at sunset, from intolerable heat to a chilling cold. This is perceived as soon as the sun is down, and is for the most part accompanied with a very heavy dew: it shows an unhealthy swampy soil, the nature of which is such,

that no sooner the sun-beams are withdrawn, than the vapours emitted from it render the air damp, raw, and chilling, in the most sultry climates; so that even under the equator, in some unhealthy places, the night-air is very cold to an European constitution.

2. Thick noisome fogs, chiefly after sunset, arising from the valleys, and particularly from the mud, slime, or other impurities. In hot countries, the smell of these fogs may be compared to that of a new-cleaned ditch. Diseases therefore, arising from this cause, generally take place in the night, or before sun-rising.

3. Numerous swarms of flies, gnats, and other insects which attend stagnated air and unhealthy places covered with wood.

4. When all butchers meat soon corrupts, and in a few hours becomes full of maggots; when metals are quickly corroded on being exposed to the air; and when a corpse becomes intolerably offensive in less than six hours; these are proofs of a close, hot, and unwholesome country. And in such places, during excessive heats and great calms, it is not altogether uncommon for Europeans, especially such as are of a gross habit of body, to be seized at once with the most alarming and fatal symptoms of what is called the *yellow fever*, without even any previous complaint of sickness or other symptoms of the disease. There has first been perceived an uneasy itching sensation, commonly in the legs; and upon pulling down the stockings, streams of thin dissolved blood followed, a ghastly yellow colour quickly diffused itself over the whole body, and the patient has been carried off in less than forty-eight hours.

5. A sort of sandy soil, commonly a small, loose, white sand, as that at Pensacola, Whydah, and the island of Bonavista, which is found by experience to be injurious to health. The pestiferous vapour arising, during the summer months and in the heat of the day, from such a sandy soil, is best characterised by its effects in the extensive deserts of Asia and Africa. It there constitutes what is called the *Samiel-wind*; a blast which, in the parched desert, proves instantly fatal both to man and beast: but when it passes over a soil well covered with grass and vegetables, has its effects greatly mitigated; it is, however, even then, productive of sickness: thus the southerly winds, while they blow from the deserts of Libya during the summer, at Algiers, Tunis, and Tripoli, produce an unhealthy season; and at Madras the winds, which, in the months of April and May, pass over a large tract of sand, are always hot, disagreeable, and unwholesome.

During these land-winds, sudden gusts of a more hot and suffocating nature are often observed to come from these sands once or twice, or even more frequently, in a day, which seem to be this vapour in a purer form. These gusts pass very quickly, and affect persons who happen to stand with their faces towards them in the same manner as the hot air which issues from a burning furnace, or from a heated oven, and obliges them immediately to turn away from it in order to recover breath. The effect of this hot suffocating blast or vapour on the human body, even when mitigated by passing through a moist atmosphere, is the same as that of intense cold; it shuts up every pore of the skin, and entirely stops the perspiration of such

as

Typhus.

Febres as are exposed to it. These blasts come only in the day-time, and always from the deserts. Water is the only known corrector or antidote against them: hence, coarse thick clothes, kept constantly wet, and hung up at the windows or doors, greatly mitigate their violence. A house so built as to have no windows or doors towards the deserts, is an excellent protection against their pernicious effects. The hot land-winds constantly blow at Madras and other places on the coast of Coromandel, at that season, from midnight till noon: the sea-breezes then begin, which relieve the difficulty in breathing, and the obstructed perspiration which the former occasioned.

That the heat of these land-winds, as also of the sudden gusts which accompany them, proceed from large tracts of sand heated by the sun, is evident from the increased heat and suffocating quality of those winds, in proportion as the day advances, and as the heat of the season is increased. The opposite winds, blowing from each side of the Balagate-mountains, are a farther proof of this. These mountains, running from north to south, divide the hither Peninsula of India into two unequal parts, and separate what is called the *Malabar* from the *Coromandel* coast. To the former they are very near, but at a great distance from the latter. The winds blowing from those hills are on the Malabar-coast always remarkably cool; but on the coast of Coromandel, in the months of April, May, June, and July, are extremely hot and suffocating, as they pass over a large tract of intermediate sand, heated during those months by an almost vertical sun. Hence the Malabar coast is always covered with an agreeable verdure; whereas the Coromandel coast, during the continuance of these hot winds, seems a barren wilderness, nothing appearing green except the trees. On the contrary, the winds that pass over these sands, after being wet with the rains, are the coldest which blow at Madras. Bottles of liquor inclosed in bags of coarse cloth, kept constantly wet, and suspended in the shade, where those hot winds may have access to them, become as cold as if they had been immersed in a solution of nitre; an effect owing undoubtedly to the constant evaporation of water from the surface.

It is an observation of the natives on the coast of Coromandel, which is confirmed by the experience of many Europeans, that the longer the hot land-winds blow, the healthier are the ensuing months; these winds, as they express it, purifying the air. Are not the winds therefore the cause why the air on the coast of Coromandel, except during their continuance, is more healthy than in other parts of India where these winds do not blow? Does not this also suggest a very probable reason, why the plague in Egypt generally ceases in the beginning of June; the periodical hot winds which come from the deserts of Nubia and Ethiopia having then rendered the air of Egypt pure and wholesome? Many have ascribed that effect to the north-winds; as the plague not only ceases when they blow, but all infected goods, household-furniture, and wearing apparel, are then said to become entirely free from the contagion: these, however, cannot be the cause, as the most destructive plague is abated in its violence, if not wholly eradicated, before they set in. With equal propriety we may reject the

opinion that the overflowing of the Nile is productive of that salutary effect, as the plague generally ceases before the increase of that river is perceptible.

Thus the plague, the greatest calamity which can afflict mankind, seems to be destroyed by those hot winds, which are otherwise so pernicious to animal and vegetable life. And although, during the continuance of these winds, the most fruitful fields wear the aspect of a parched desert, yet no sooner the rains fall, but vegetation is restored, the plants revive, and a beautiful verdure is again spread over the face of the country.

Having thus given an account of the signs of an unhealthy country, Dr Lind next proceeds to mention such employments as are particularly dangerous to Europeans on their first arrival. One of these is the cutting down of trees, shrubs, &c. or *clearing the ground*, as it is called. Of the unhealthiness of this employment he gives two instances. At the conclusion of the late peace, the captain of a ship of war went on shore at the island of Dominica, with 12 of his men, to cut down the wood, and to clear a piece of ground which he intended to have purchased: but, in a few days, sickness obliged him to desist from this dangerous work; the captain and 11 of his men being seized with violent fevers, which terminated in obstinate intermittents, and of which several died. The survivors suffered so much in their constitutions, that, even after they came to England, the return of an east-wind was apt to bring on a violent fit of the ague. The *Ludlow-Castle*, a ship of war of 40 guns, in a voyage to the coast of Guinea, also lost 25 of her men at Sierra Leona, who were employed in cutting down wood for the ship. This is an occupation which has often proved destructive to Europeans in those climates, and in which they ought never to be employed, especially during the rainy season; there being numberless instances of white persons, when cutting down the woods at that season, who have been taken ill in the morning, and dead before night.

Another evil, less known, and less suspected, but no less dangerous, is the sending of Europeans in open boats after sunset, where the soil is swampy, or where there are great night-fogs. The single duty alone of fetching fresh-killed butchers meat at night for the use of our ships companies in the East and West Indies, has destroyed every year several thousand seamen. In those parts of the world, butchers meat must be brought on board at night immediately after it is killed, otherwise it will not be fit for use the next day; but a contract made with the natives to send it on board at that time, which might be done for a trifling sum, would be the means of preserving many useful lives. During the sickly season at Batavia, a boat belonging to the Medway, which attended on shore every night, was three times successively manned, not one having survived that service. They were all taken ill in the night, when on shore, or when returning on board; so that at length the officers were obliged to employ none but the natives on that business. Great numbers of men have perished from being employed in this manner at Bengal, where the European ships often anchor in the most unhealthy spots of the river; and even when the great night-fogs arise, after the rainy season, the men are often obliged to perform such night-services in boats.

Febres

boats. Now since it is so dangerous for Europeans in unhealthy countries, particularly during a season of sickness, to be exposed in an open boat to the foggy night-air, it must appear, that sending them unprotected, in open boats, far up rivers, in unhealthy Southern climates, for the sake of wood, water, trade, or other purposes, must be attended with the most destructive and fatal consequences.

Burying the dead in swampy countries is another occupation which has proved fatal to many, and which ought to be entrusted to negroes or the natives of the country. The effluvia from the ground when newly opened, whether from graves or ditches, are far more dangerous than from the same swampy soil when the surface is undisturbed; nay, in some places, it has been found almost certain death for an European to dig a grave, unless long seasoned to the country. In such a place, the attendance of friends at funerals ought to be dispensed with.

In all cases where it is practicable, the ships which visit these unhealthy countries should anchor at as great a distance as possible from shore; or if obliged to anchor near marshy grounds or swamps, especially during summer or in hot weather, and when the wind blows directly from thence, the gun-ports which would admit the noxious land-breeze ought to be kept shut, especially at night. Or if the ship rides with her head to the wind, a thick sail ought to be put upon the fore-mast, along which the smoke from the fire-place might be made constantly to play and ascend. If the sail should occasion a little smoke between decks, this inconvenience will be sufficiently compensated by its keeping off the direct stream of the swampy shore effluvia; which now being obliged to form a curve before they reach the more distant parts of the vessel, must needs be greatly diverted and scattered.

The best preservative against the mischievous impressions of a putrid fog, or of a marshy exhalation, is a close, sheltered, and covered place; such as the lower apartments in a ship, or a house in which there are no doors or windows facing the swamps. If in such places a fire be kept either at the doors and other inlets to a house, or in the chambers, as is practised in some unhealthy countries during the rainy or foggy season, it will prove an excellent and effectual protection against the injuries of a bad air. On board of ships also fires may be made at the hatchways; and of the good effects of this we have the following example. When the *Edgar*, a ship of war of 60 guns, was upon the coast of Guinea in the year 1768, her men were very sickly, and many of them died: however it was observed, that in a sloop of war, which was constantly in company with her, few were taken ill, and not one died during the whole voyage. This could be ascribed to no other cause, but that in the sloop the fire-place for cooking victuals was on the same level with the deck where the men lay; and every morning when the fire was lighted, especially when there was but little wind, the smoke from the cook-room spread itself all over the ship, and particularly over those parts where the men lay; but from the construction of the fire-place of the *Edgar*, no smoke from it ever came between her decks.

Persons on board any ship whatever, are much more safe, and their situation is much preferable to that of

those who make distant inland excursions in small boats upon the rivers, and who are for the most part ignorant of the cause of those maladies which destroy them. The intolerable heat at noon often obliges such persons to go in a manner half-naked; while a free and plentiful perspiration issues from every pore. A near approach to putrid swamps at this time is apt to produce an immediate sickness, vomiting, and afterwards a low nervous or malignant fever. But if they happen to pass them at night, or lie near them in an open boat, the air from those swamps is perceived to be quite chill and cold; in so much that warm thick clothing becomes absolutely requisite to guard the body against the impressions of so great an alteration in the air, and against its cold and inclement quality: for the effects of it then, even on the most healthy and vigorous constitution, is frequently a chilling cold fit of an ague, terminating in a fever with delirium, bilious vomitings, a flux, or even death itself.

But where such exposure becomes unavoidable, the only method is then to defend the body as much as possible against the pernicious miasmata with which the air abounds.—All those who are employed in cutting down woods, or in other laborious and dangerous services in hot climates, during the heat of the day ought to have their heads covered with a bladder dipt in vinegar, and to wash their mouths often with the same liquor; never to swallow their spittle, but rather to chew a little rhubarb or some other bitter, and spit it out frequently; to stop their nostrils with a small bit of linen or tow dipped in camphorated vinegar; and to infuse some bark, garlic, and rhubarb, in brandy, of which a dram is to be taken, either by itself or diluted with water morning and evening.

In the evening before sunset they should leave off work, and not return to their labour in the morning till the sun has dispersed the unwholesome dews and vapours. Those who must of necessity remain on shore, and sleep in dangerous places, must take care not to sleep upon the ground exposed to the dews, but in hammocks in a close tent, standing upon a dry sand, gravel, or chalk, near the sea shore, and where there is no subterraneous water for at least four feet below the surface of the ground. The door of this tent should be made to open towards the sea; and the back part of it, which receives the land breeze, must be well secured by double canvas, or covered with branches of trees. But in such circumstances, a hut, when it can be procured, is preferable to a tent, especially if it be well thatched, so as to prove a defence both against the excessive heat of the sun by day, and the noxious dews which fall at night. Here the men may be enjoined to smoke tobacco. When the air is thick, moist, and chill, the earth being overspread with cold dew, a constant fire must be kept in and about the tent or hut, as the most excellent means of purifying such unwholesome air, and of preserving the health of those who either sleeping or waking are exposed to its influence. The centinels who guard the water-casks, ought likewise at such a time to have a fire burning near them. All old and forsaken habitations, natural caves and grottos in the earth, where the men may be induced to take up their abode, must before their admission be perfectly dried and purified with

Typhus.

Febres with sufficient fires. Fire and smoke are undoubtedly the great purifiers of all tainted and unwholesome air, and the most excellent preservatives against its noxious influence. It is the custom of the negroes in Guinea, and also of some Indians (who both sleep for the most part on the ground), to have a fire, producing a little smoke, constantly burning in their huts where they sleep. This not only corrects the moisture of the night, but also, by occasioning more smoke than heat, renders the damp from the earth less noxious; of which Dr Lind gives the following remarkable instance. A Guinea ship being up one of the rivers for the sake of trade, it was found to be very dangerous to sleep on shore; without which their trade could not be so conveniently carried on. First the captain, then the mate, and two or three of the seamen, were taken ill; each of them the morning after they had lain on shore. By these accidents the men were greatly intimidated from lying ashore; till the surgeon boldly offered to try the experiment on himself. Next morning when he waked, he found himself seized, as the rest, with a giddiness and pain in the head, &c. He immediately acquainted one of the negroes with his condition, who carried him to his hut, and set him down in the smoke of it; when his shiverings and giddiness soon left him. He then took a dram of the bark bitter; and found himself greatly relieved, especially by breathing some time in the smoke.—Thus instructed by the negro, he ordered a large fire to dry the hut he slept in; and afterwards had every night a small fire sufficient to raise a gentle smoke, without occasioning a troublesome heat: and by this means he and several others, using the same precautions, slept many nights on shore without any inconvenience.

Fire and smoke indeed are found to be certain correctors, or rather destroyers, of infection in all cases, whether arising from the noxious effluvia of marshes, or from the contagion of diseased bodies. Even those most extraordinary and fatal damps called *barmattans*, are unable to resist the salutary effects of smoke. In other cases, Dr Lind remarks, that, under some circumstances, the source of an infection in a sick chamber or any other place, may be removed or destroyed by accidental means, for which we cannot account, and which we often cannot ascertain. But it oftener happens, that it is very difficultly rooted out; and that exact cleanliness, with the benefit of a pure air, often proves insufficient to remove the evil. Smoke, however, has never been known to fail. It is not to be doubted, that, excepting the true plague, there has been an infection fully as pestilential and as mortal in some ships as in any other place whatever; yet it has never been heard, that any ship, after having been carefully smoked, did not immediately become healthy: and if afterwards they turned sickly, it was easy to trace that sickness from other infected ships, jails, and the like places.

There are three methods practised for purifying vessels after the men have been removed out of them. The first is by burning of tobacco. A quantity of tobacco is spread on several fires, made with such old pieces of rope as are called *junk*. These are dispersed into different places of the ship, and their heat and smoke afterwards closely confined below for a considerable time.—The second method is by charcoal fires

strewn with brimstone. The heat and steam of these burning materials must also be long and close shut up: but, although this fume, properly applied, has been found by experience to purify most effectually tainted apartments, ships, clothes, &c. yet there are some kinds of vermin which it will not destroy, particularly lice. The third method of purification is performed by the addition of arsenic to the materials of the second process, in the following manner. After carefully stopping up all the openings and every small crevice of the ship (as was also necessary in the preceding processes), a number of iron pots, properly secured, are to be placed in the *hold*, *orloze*, *gun-deck*, &c. Each of these are to contain a layer of charcoal at the bottom, then a layer of brimstone, and so alternately three or four layers of each, upon which the arsenic is to be sprinkled, and on the top of it some oakum dipped in tar is to be laid to serve as a match. The men, upon setting fire to the oakum, must speedily leave the place, shutting close the hatchway by which they came up.

From the known and experienced efficacy of these processes, it appears, that fire and smoke are the most powerful agents for annihilating infection; and, it may be presumed, even the plague itself. This is in some measure agreeable to what we learn from the ancient records of physic. But the preposterous use, or rather abuse, of fire on such occasions, has caused its effects to be disregarded by some, and to be suspected of mischief by others. The modern practice of burning large fires in the open air, in the streets, and about the walls of towns infected with the plague or other contagion, is founded on principles groundless and erroneous; and has therefore been found by experience not only unsuccessful, but hurtful. But though this must be allowed, it doth not thence by any means follow, that when once a house hath been infected, and the patients removed from it, the doors and windows at the same time being shut, that such fires will then prove hurtful; or that, by this method of purification, all the seeds of contagion will not be effectually destroyed. Whenever, therefore, persons die of a spotted fever, a malignant sore throat, the small-pox, or any distemper found to be communicable from the sick to others, the corpse ought quickly after death to be removed into another room; that in which the person died should be well aired, by having the windows opened, till a charcoal-fire be kindled, with some rolls of sulphur upon it; after which, both doors and windows should be kept shut for a considerable time, not less than eight or ten hours, till the room be thoroughly smoked. In several ships, where there are the fairest opportunities of trying and judging things of this nature, the contagion of the small-pox has been entirely stopped by wood-fires, sprinkled with brimstone, kept burning and closely confined in the infected place. In a word, a judicious and proper application of fire and smoke is the best means for the destruction and utter extinction of the most malignant sources of disease; and they are besides the greatest purifiers of all bad and tainted air.

Next to the smoke of wood for purifying a tainted air, that of gun-powder is to be esteemed the best; and it has this further good property, that it is entirely inoffensive to the lungs. The cascarilla-bark, when burning, gives a most agreeable scent to the chamber of the sick; so is at least an elegant preservative, and may prevent

Febris

prevent bad smells from taking effect. The steam of camphorated vinegar warmed, is still more powerful for this purpose. But, besides correcting the ill quality of the air, and purifying the chamber, another good effect is produced from such steams and smoke as are inoffensive to the lungs. As soon as the vapour becomes dense, the nurses and patients become desirous of the admission of fresh air by the door or windows. Now it is certain, that the air in the chambers of the sick cannot be too often changed, provided the patient be well covered, and the curtains of his bed, if necessary, be drawn close. No argument is so forcible to obviate the danger of foul air in a room or ward (occasioned by the obstinacy of nurses or relations), as ordering it to be frequently fumigated or smoked: A practice more frequent in other countries than in this, but of great benefit to the sick.

Lastly, with regard to the method of purifying goods, moveables, clothes, &c. which are supposed to harbour infection, it must be observed, that the usual custom of only unpacking and exposing such materials to the open air, is in many instances insufficient to destroy the latent seeds of disease. It is certain indeed, that in most cases the contagious particles are more readily and fatally communicated from the clothes of a sick person than from his body. The spreading abroad, therefore, of contaminated clothes to dry or to be aired, without a previous fumigation of them, may be of dangerous and fatal consequence. All such suspected substances should be first fumigated in a close place, and in the same manner as an infected chamber, after which they may be spread abroad and exposed to the air. In infectious diseases, especially fevers, the linen of the sick, or such clothes about them as will admit of being washed, ought never at first to be put in warm water, as it is dangerous to receive the steam that may hence arise. It is necessary to steep them first either in cold water or in cold soap-lees for several hours, that the filth may be washed off.

We must now proceed to give an account of the method of cure, after these methods of preventing the infection from being received into the body have either been neglected or proved ineffectual. Here it is of the utmost importance to take the disease in the very beginning, before it hath time to corrupt the fluids to such a degree as to endanger life. In these slight degrees of infection, a vomit properly administered, especially if succeeded by a blister, never fails to remove the disorder, and prevent the fever which would otherwise unavoidably follow. Of this Dr Lind gives the following instances. A lady afflicted with the bilious cholic, had intolerably fetid discharges of corrupted matters upwards and downwards. A gentlewoman, only in passing the room, was immediately seized with a retching and sickness, which continued 24 hours. The nurse who attended was suddenly seized with a giddiness and vomiting from the bad smell, which, as she expressed it, reached into her stomach. The vomiting became more severe at night, accompanied with a purging and frequent shiverings. By means of an emetic both evacuations were stopped: notwithstanding which, for some days afterwards, she continued to have frequent tremors, and a violent head-ach, with a low irregular pulse; and did not recover so soon as the patient.

N^o 204.

Typhus.

Such slight degrees of infection have been often observed to be derived from patients of a gross habit of body, when labouring under inflammatory distempers, and even other complaints. A man was sent to Haslar Hospital, supposed to have a fever. He was furiously delirious, with a quick full pulse. Notwithstanding plentiful evacuations, this delirium continued for two months with short intervals; when the case was found to be plainly maniacal. A nurse, upon raising this person up in her arms, perceived an intolerably bad smell, and was instantly seized with shiverings, sickness, and head-ach. Finding herself very ill, she took a vomit in six hours afterwards, and passed the night in profuse sweats by means of a sudorific draught. Next morning the violence of the head-ach was but little abated; upon every attempt to move, she complained of a burning heat and pain in her forehead, and became giddy. Her inclination to drink was frequent, and her pulse low and quick. A blister was immediately applied to the back; as soon as the blister took effect, the head-ach and thirst entirely left her, and the pulse was calm. Next day she arose and was well.

Many similar instances of infection have been observed from putting the dead into their coffins. In particular, one man, who, from performing that duty to his messmate, was so ill, even after the operation of the vomit, as to require a blister. In the course of one week two nurses were infected by a person in the small-pox. Both were seized in like manner with shiverings, sickness, and head-ach; the one upon receiving the patient's breath, the other upon making his bed. In one, a pain darted into her breast; in the other, into the breast and in the small of the back. The complaints of the former were speedily removed by a vomit, though she continued to have irregular returns of shiverings for three days afterwards. But in the latter, though the head-ach, sickness, and rigors, were greatly abated by the vomit, yet a constant heat and thirst, with a low pulse, and a violent pain in the breast, indicated the necessity of applying a blister to the affected parts, which next morning removed all her complaints.

A person is often immediately sensible of his having received an infection from the first attack: they generally compare the first impression to an earthy, disagreeable smell, reaching down, as they express it, into their stomach, as from a grave newly opened, but not quite so raw as the cadaverous stench; and the effects of it, shivering and sickness, are instantaneous. It is a smell difficult to describe; but is well known to the nurses and attendants about the sick, as it usually accompanies fevers of extreme malignity, and, with the peculiar discharges from the blistered parts, may be reckoned among the most constant symptoms of a bad fever. Some compare the smell to that of rotten straw. It often resembles the disagreeable smell of a person labouring under the confluent small-pox at their turn, though not so strong. One person, on receiving the infection, was sensible of something like an electric shock through his body. But many are not sensible of any effect from an infection at first; and an infection from a fever will sometimes continue for many days, nay weeks, discovering itself chiefly by irregular shiverings, sometimes so severe as to oblige the patients to have

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Febres

Typhus.

recourse to their beds once or twice a-day; sometimes every other day. Among a number thus affected, it also appears, that such as are put into unseasoned chambers, or have sat down on the cold ground, lain in raw damp apartments, &c. are immediately seized with a sickness at stomach, sometimes with a dangerous purging, and often with fevers accompanied with bad symptoms, which others have entirely escaped.

It now remains to consider the proper method of curing putrid fevers, on the supposition that the infection has been allowed to operate till the blood becomes radically tainted, and of consequence the nervous system affected to such a degree, that its power cannot be restored by any of the simple medicines above-mentioned. Here all authors agree, that a change of air, when it can be effected, is absolutely necessary, and often contributes more towards the removing of the disease than all the medicines that can be exhibited. The utility of this change will appear from what hath been formerly said; and we shall only further allege one instance from Dr Lind, in which the effects of bad air appear to a degree almost incredible. "It is remarkable (says he), that in the last war, the English ships which touched at Batavia suffered more by the malignant and fatal diseases of that climate, than they did in any other part of India, if we except a fatal scurvy which once raged in that fleet at sea. Soon after the capture of Manila, the Falmouth, a ship of 50 guns, went to Batavia, where she remained from the latter end of July to the latter end of January; during which time she buried 100 soldiers of the 79th regiment and 75 of the ships company; not one person in the ship having escaped a fit of sickness, except her commander Captain Brereton. The Panther, a ship of 60 guns, was there in the years 1762 and 1764; and both times during the rainy season. In the former of these years, she buried 70 of her men; and 92 of them were very ill when she left the place. In the year 1764, during a short stay, 25 of her men died. The Medway, which was in company with her, lost also a great number of men. Nor was the sickness at that time confined to the ships; the whole city afforded a scene of disease and death: streets crowded with funerals, bells tolling from morning to night, and horses jaded with dragging the dead in hearses to their graves. At that time a slight cut of the skin, the least scratch of a nail, or the most inconsiderable wound, turned quickly to a spreading putrid ulcer, which in 24 hours consumed the flesh even to the bone. This fact is so extraordinary, that, upon a single testimony, credit would hardly be given to it; yet on board the Medway and Panther they had the most fatal experience of it, and suffered much from it."

But where a change of air is impracticable or ineffectual, and where the fever hath already made some progress, Sir John Pringle generally took away some blood if the pulse was full. When the symptoms run high, a plentiful evacuation of that kind seemed indicated; yet it was observed that large bleedings generally did harm, by sinking the pulse, and affecting the head. Nor was a moderate bleeding to be repeated without caution; even those whose blood was fizy, unless their lungs were inflamed, were the worse for a second bleeding. If the head only suffered, it was much safer to use leeches than to open a vein in the arm; but

Vol. XI. Part I.

in the delirium with a sunk pulse, even leeches were hurtful. Many recovered without letting blood, but few who lost much of it.

Vomits also must be used with caution; for though they may be of use by way of prevention, yet in the advanced state of the disease, when the patient has all along complained of a sickness at stomach, they are evidently unsafe. Here the antiseptic quality of fixed air is of much use, and the neutral draughts given in the act of effervescence are generally attended with happy effects. Nay, clysters of fixed air itself have been found very serviceable. Even in very bad stages of the distemper, where a putrid and colliquative looseness has taken place, clysters of fixed air have been known to alleviate the symptoms. We must not, however, put too much confidence in medicines of this kind. Mild astringent cordials, especially wine and Peruvian bark, are the only resources in these disorders. Concerning the former, Sir John Pringle observes, in the low state of these fevers, and in great sinkings, which either come after unseasonable bleedings or long want of nourishment, it was a most grateful and efficacious cordial, to which nothing was comparable. The common men had an allowance, from a quarter to half a pint in a day, of a strong kind, made into whey, or added to the panada which was their ordinary food. But to others out of the hospital, he usually prescribed Rhenish or a small French wine, whereof some consumed near a quart per day, and part of that undiluted. Nay, so great was the virtue of wine in this stage of the fever, that several were known to recover from the lowest condition, when, refusing the bark on account of its taste, they took nothing but a little panada with wine and a volatile diaphoretic mixture every two or three hours by turns. Perhaps there is no rule more necessary in this state, than not to let the patient when low remain long without taking something cordial and nourishing; as many have been observed past recovery, by being suffered to pass a whole night without any support about the time of the crisis. In the advanced state of this fever the sick are remarkably low; and therefore Hoffman advises in such cases, that they should be constantly kept in bed, and not permitted even to sit up in it. In the last stage of this fever, as well as in that of the sea-scurvy, it would seem that the force of the heart was too small to convey the blood to the brain, except when the body is in an horizontal posture.

But, however necessary wine and the bark may be in the low stage of this fever, we must remember, that these remedies are to be administered only as antiseptics and supporters of the *vis vite*, without aiming at thoroughly raising the pulse or relieving the head, or at forcing a sweat by them, before nature points that way, and which Sir John Pringle seldom observed before the 14th day. For though the patient may die before that time if he has been largely bled, or if the cordial medicines have been given him too freely, yet such means as he made use of were not powerful enough to bring on a crisis sooner.

In the low state of the hospital-fever, a stupor was a constant attendant, which was very apt, in the evening, to change to a slight delirium. If this was all, as being in the common course, nothing was done. But if the delirium increased upon using wine, if the

T

eyes

Febres

eyes looked wild, or the voice became quick, there was reason to apprehend a phrenitis; and accordingly it was observed, that at such times all internal heating medicines aggravated the symptoms; and in these cases blisters were of the greatest service. Fomentations of vinegar and warm water for the feet, our author is of opinion would answer better than either sinapisms or blisters, provided they were long enough and often enough applied. In the inflammatory fevers, he has known these fomentations have little effect for the first hour, and yet succeed afterwards. For internal medicine, the bark was omitted for some time, but the patient was continued with an acidulated drink, viz. barley-water and vinegar; and treated also with camphire, *pulvis contrayervæ compositus*, and nitre, as was usual in the beginning of the fever. If the delirium was of the low kind, a decoction of the bark and wine were the only remedies; for in no instance was the delirium perfectly removed till the time of the crisis. It must also be observed, that a delirium may arise in putrid fevers from two opposite errors; one from large and repeated bleedings, and the other from wine and the cordial medicines being taken too early. It appears therefore how nice the principles are that regard the cure; as neither a hot nor a cool regimen will answer with every patient; or in every state of the disease.

If a diarrhoea came on in the decline of the fever, it was moderated, but not suppressed, by adding an opiate to the usual medicines. For though the looseness may be considered as critical; yet as the sick were too low to bear evacuations, there was a necessity for restraining it in some measure; and it has often been observed, that when it has been treated in this manner, about the usual time of the crisis, the patient has fallen into a gentle sweat, which has carried off the disease. In the worst cases of this fever, and especially when it coincides with the dysentery, the stools are frequently bloody; in which dangerous state, if any thing could be done, it was attempted by medicines of the same kind. In proportion to the putrid nature of the stools, opiates and astringents were used with the greater caution.

If the disease terminate in a suppuration upon one of the parotid glands (for the gland itself does not suppurate), the abscess was opened without waiting for a fluctuation, which might never happen; the pus being often here so viscid, that after it was ripe the part felt nearly as hard as if the suppuration had not begun.

Almost every patient, after the fever, complained of want of rest, frequently of a vertigo or confusion of the head, of a continuation of the deafness, or of other symptoms commonly called *nervous*. An opiate was then given at night; and in the day some strengthening medicines, such as the bark and the elixir of vitriol. In these cases, the bark was found not only to be the best strengthener, but the surest preservative against a return of the disease. For this last intention the convalescent was ordered about three drachms a-day for six or seven days together; and afterwards, if he remained longer in the hospital, some smaller quantity daily. But if there was any appearance of a hectic fever from an inward abscess, the case was treated accordingly. Upon comparing some of the remaining symptoms of those who recovered, with the condition of the brain in those who died and were

opened, Sir John Pringle was induced to think, that some part even of that substance might suppurate, and yet the person recover.

Sometimes the patient falls into an irregular intermittent; which, if not of a hectic nature from an internal abscess, may proceed from neglecting to clear the *primæ viæ*. For it is easy to conceive, that after a long fever of such a putrid nature, often attended with langour of the bowels, the fæces may be so much accumulated, and so corrupted, as to occasion new disorders. In such cases, after proper evacuation by a purge, the bark was almost an infallible remedy.

The Yellow Fever.

Typhus cum flavedine cutis.

Typhus icteroides, Sauv. sp. 7.

Febris flava Indiæ Occidentalis, Warren. Malignant fever of Barbadoes, Hillary's Diseases of Barbadoes. *Lining* on the yellow fever of South Carolina, Edin. phys. and liter. Essays, vol. ii. Mackittrick de febre flava Indiæ Occidentalis, Edin. 1766.

Description. This is one of the most fatal diseases to which the inhabitants of warm climates are subject, and is the same with that called, from one of its worst symptoms, the *black vomit*, which is so terribly destructive in some of the warm parts of America, particularly at Carthage. According to Dr Hillary, the yellow or putrid bilious fever most commonly seizes the patient at first with a faintness, then with a sickness at stomach, accompanied mostly with a giddiness of the head; soon after with a slight chilliness and horror, very rarely with a rigor, which is soon followed by a violent heat and high fever, attended with acute darting pains in the head and back. A flushing in the face, with an inflamed redness and a burning heat in the eyes, great anxiety and oppression about the præcordia, are the pathognomonic signs of the distemper; especially when attended with sickness at stomach, violent retchings, and bilious yellow vomitings, with frequent sighing. The pulse is now generally very quick, high, soft, and sometimes throbbing, but never hard: in some it is very quick, soft, low, and oppressed; the respiration quick, full, and sometimes difficult; the skin very hot, and sometimes dry, though more frequently moist. Blood taken from the patient, even at the very beginning of the disease, is often of an exceeding florid red colour; much rarefied and thin, and without the least appearance of size; and the crassamentum, when it has stood till it is cold, will scarce cohere, but fluctuates; the serum is very yellow.

Most of the abovementioned symptoms continually increase, and are much aggravated: the retching and vomiting become almost incessant; the anxiety great, and sighing frequent; great restlessness; continual tossing; no ease in any posture; little sleep, and that disturbed and uneasy, and without any refreshment to the sick: and when they are fainting, they turn yellow about the face and neck, instead of turning pale; and as the fainting goes off, they recover their natural colour. These symptoms generally continue to the third day, though sometimes not longer than the first or second, in others to the end of the fourth: the first shows the greater dissolution of the blood, and the greater malignity of the disease; the last, the contrary; which

Febres

Typhus.

which the improper manner of treating the disease sometimes hastens and increases, or the proper method retards. This may be called the first stadium of the disease, and generally ends on the third day.

Blood taken from the sick on the second or third day, is much more dissolved, the serum more yellow, and the crassamentum florid, loose, scarce cohering, but undulates like fizy water when shaken, and sometimes has dark blackish spots on its surface, showing a strong gangrenescent diathesis.

About the third day, the pulse, which was quick and full before, now generally sinks greatly, and become very low: though sometimes it remains very quick, yet in others it is not much quicker than when the patient is in health, but is always low; the vomiting becomes almost incessant if not so before, and the matter thrown up is black; the patient then becomes comatose, with interrupted deliria. The thirst in some is very great, in others but little; the pulse still low and quick, attended with cold clammy sweats, and sometimes with deliquia. The eyes, which were inflamed and red before, and began to be of a more dusky colour, now turn yellow; and this yellowness also soon after appears round the mouth, eyes, temples, and neck, and in a short time diffuses itself all over the body. But this yellowness is so far from being always an encouraging prognostic, as some would have it, that it most commonly proves a mortal symptom. Sometimes indeed, though seldom, this suffusion of bile upon the surface has proved critical; but then it did not come on till the eighth or ninth day, nor appear till the coma and all the other bad symptoms began to abate; and then in proportion as the yellowness increases, all the bad symptoms decrease. But the case is most commonly quite the reverse; especially when the yellowness comes soon on: and then it is not only symptomatical, but ushers in the most fatal symptoms of the disease, viz. a deep coma, a low, vermicular, and intermitting pulse, great hæmorrhages from various parts of the body, a delirium with laborious and interrupted respiration, great anxiety, deep sighing, restlessness, a subfultus tendinum, coldness of the extreme parts first, and then all over the body, a faltering of the speech, tremors, and convulsions, which are soon after followed by death. So that from the first appearance of the yellowness we may say the patient is in the last stage of the disease, whether it terminates in death or recovery.

It has been observed, that, in some strong sanguine constitutions, when the patients have not been bled to a sufficient quantity in the beginning of the disease, the pulse has continued full, strong, and rapid, but never hard; the face flushed, eyes inflamed; the tongue dry, with great thirst and heat, till the second or last stage of the fever is come on, when the pulse has suddenly sunk, and death soon after ensued. Yet in others, who seemed to be of a plethoric habit, the tongue has been moist all along, though they have been delirious most of the time, and the heat of their skin and the strength and quickness of their pulse have continued, after the first stage of the disease was over, pretty near to that of their natural state in health, till within a few hours of their death; and when they have had a coma on them, one who is not well ac-

quainted with the nature of this disease would, from their pulse, heat, breathing, and other symptoms, have taken them to be in a natural sleep. Others, when the pulse has begun to sink, and the fatal period seemed to be just approaching, to the great surprise of all present have recovered their senses, sat up, and talked pretty cheerfully for an hour or two, and in the midst of this seeming security have been suddenly seized with convulsions, which carried them off immediately.

In the latter stage of this fever, the blood is so attenuated and dissolved, that we frequently see it flowing not only out of the nose and mouth, but from the eyes, and even through the pores of the skin; also great quantities of black, half-baked, or half-mortified blood, are frequently voided both by vomiting and by stool, with great quantities of yellow and blackish putrid bile by the same passages; and the urine, which was before of a high icteritious colour, is now almost black, and is frequently mixed with a considerable quantity of half-dissolved blood. The pulse, which was much sunk before, now becomes very low, unequal, and intermitting; the breathing difficult and laborious; and the anxiety inexpressible: an oppression with a burning heat about the præcordia comes on, tho' the extremities are cold, and often covered with cold clammy sweats: a constant delirium follows; and then a total loss of the outward senses as well as the judgement, with livid spots in many parts of the body, especially about the præcordia; and sometimes gangrenes in other parts of the body, which are very soon succeeded by death.

In a short time after death, the body appears much more full of livid, large, mortified spots, particularly about the præcordia and hypochondres, especially the right; which parts seem, even from the first seizure, to be the principal seat of this terrible disease; and, upon opening the bodies of those who die of it, we generally find the gall-bladder and biliary ducts turgid, and filled with a putrid blackish bile; and the liver, stomach, and adjoining parts, full of livid or blackish mortified spots; and the whole corpse soon putrifies after death; and can be kept but a few hours above ground.

Dr Lind is of opinion, that the remarkable dissolution of the blood, the violent hæmorrhages, black vomit, and the other symptoms which characterize the yellow fever, are only accidental appearances in the common fever of the West Indies; that they are to be esteemed merely as adventitious, in the same manner as purple spots and bloody urine are in the small-pox, or as an hiccough in the dysentery: like these they only appear when the disease is attended with a high degree of malignity, and therefore always indicate great danger. This opinion, he thinks, is confirmed by an observation of Dr Wind's, that in 1750 the crew of a Dutch ship of war were distressed by the yellow fever, accompanied with the black vomit; but when the ship left the harbour, and changed the noxious land-air for one more healthy, the fever continued, but was not accompanied with the black vomit.

Diseases similar to this fever, Dr Lind informs us, may arise in any part of the world where the air is intensely hot and unwholesome; and therefore he

Febres

treats as chimerical the notion of its being imported from one part of the world to another. An example of this happened at Cadiz in Spain, in the months of September and October 1764, when excessive heat, and want of rain for some months, gave rise to violent, epidemic, bilious disorders, resembling those of the West Indies, of which 100 persons often died in a day. At this time the winds blew principally from the south, and after sun-set there fell an unusual and very heavy dew.

This disease began commonly with alternate slight chills and heats, nausea, pains of the head, back, loins, and at the pit of the stomach. These symptoms were often followed, in less than 24 hours, with violent retchings, and vomiting of a green or yellow bile, the smell of which was very offensive. Some threw up an humour as black as ink, and died soon after in violent convulsions and in a cold sweat. The pulse was sometimes sunk, sometimes quick, but often varying. After the first day, the surface of the body was generally either cold, or dry and parched. The head-ach and stupor often ended in a furious delirium, which quickly proved fatal. The dead bodies having been examined by order of the court of Madrid, the stomach, mesentery, and intestines, were found covered with gangrenous spots. The orifice of the stomach appeared to have been greatly affected, the spots upon it being ulcerated. The liver and lungs seemed to be putrid, both from their texture and colour. The stomach contained a quantity of an atrabilious liquor, which, when poured on the ground, produced a sensible effervescence; and, when mixed with spirit of vitriol, a violent ebullition ensued. The dead bodies so quickly turned putrid, that at the end of six hours their fetor was intolerable; and, in some of them, worms were found already lodged in the stomach. His Majesty's ship the Tweed being at that time in Cadiz bay, several of her men were taken ill when on shore, but by being carried on board all of them recovered. Neither did the black vomit, or any other deadly symptom of that fever, make its appearance in any of the ships.

It has been a matter of much dispute, whether the yellow fever is of an infectious nature or not. Some time ago it became an object of consideration before the Right Hon. the Lords Commissioners of Trade and Plantations, where it was urged, among other reasons, for not removing the seat of government and justice in the island of Jamaica from Spanish Town to Kingston, that there was danger from Greenwich hospital, situated near Kingston, of an infection from the yellow fever being frequently communicated to that town. On this affair a physician was consulted, who had long practised in that island, and who gave it as his opinion, that from the yellow fever in that island there was no infection. This was the opinion not only of that gentleman, but of many others who had an opportunity of being well acquainted with this fever in Jamaica. Dr Lind, however, gives a remarkable instance of its being of an infectious nature.—A gentleman dying at Barbadoes of a yellow fever, his wearing apparel and linen, packed up in a chest, were sent to his friends at Philadelphia; where, upon opening the chest, the family was taken ill; and the clothes being unluckily hung abroad to be aired, they pre-

sently diffused the contagion of the yellow fever over the whole town, by which 200 persons died. These contradictions, Dr Lind thinks, can only be reconciled, by supposing the yellow fever in the West Indies to be sometimes of an infectious nature and sometimes not.

In the description of the same fever by Dr Lining, as it appears in South Carolina, there are several particulars considerably different from that by Dr Hillary. According to the former, people complained for a day or two before the attack, of a head-ach, pain in the loins and extremities, especially in the knees and calves of the legs, loss of appetite, debility, and a spontaneous lassitude. Some, however, were seized suddenly, without any such previous symptoms. After a chilliness and horror, with which this disease generally invades, a fever succeeded. The pulse was very frequent, till near the termination of the fever, and was generally full, hard, and consequently strong: in some, it was small and hard; in others, soft and small; but in all those cases, it frequently varied in its fullness and hardness. Towards the termination of the fever, the pulse became smaller, harder, and less frequent. In some there was a remarkable throbbing in the carotids and in the hypochondria; in the latter of which it was sometimes so great, that it caused a constant tremulous motion of the abdomen. The heat generally did not exceed 102 degrees of Fahrenheit's thermometer; in some it was less; it varied frequently, and was commonly nearly equal in all parts, the heat about the præcordia being seldom more intense than in the extremities when these were kept covered. In the first day of the disease, some had frequent returns of a sense of chilliness, though there was not any abatement of their heat. In a few, there happened so great a remission of the heat for some hours, when at the same time the pulse was soft and less frequent, and the skin so moist, that one from these circumstances might reasonably have hoped that the fever would only prove a remittent or intermittent. About the end of the second day, the heat began to abate. The skin was sometimes (though rarely) dry; but oftener, and indeed generally, it was moist, and disposed to sweat. On the first day, the sweating was commonly profuse and general; on the second day, it was more moderate: but on both these, there happened frequent and short remissions of the sweatings; at which times the febrile heat increased, and the patient became more uneasy. On the third day, the disposition to sweat was so much abated, that the skin was generally dry; only the forehead and backs of the hands continued moist. The respiration was by no means frequent or difficult; but was soon accelerated by motion, or the fatigue of drinking a cup of any liquid. The tongue was moist, rough, and white, even to its tip and edges. On the second day, its middle in some was brown. On the third day, the whiteness and roughness of the tongue began to abate. The thirst in very few was great. A nausea, vomiting, or frequent retchings to vomit, especially after the exhibition of either medicines or food, came on generally the third day, as the fever began to lessen; or rather as the fulcra of the pulse, heat, and disposition to sweat, began to abate. Some indeed, but very few, on the first day, had a vomiting, either bilious or phlegmatic. Very few complained of anxiety or oppression about the præcordia

Typhus.

Febres

Typhus.

dia or hypochondria, nor was there any tension or hardness about the latter. On the first day they generally dozed much, but were afterwards very watchful. Restlessness and almost continual jactations came on the second day. A great despondency attended the sick, and the strength was greatly prostrated from the first attack. The pain in the head, loins, &c. of which they had complained before the attack, were greatly increased, and in some the pain in the forehead was very acute and darting; but those pains went generally off the second day. The face was flushed; and the eyes were hot, inflamed, and unable to bear much light. On the first day, many of them at times were a little delirious, but afterwards not until the recess of the fever. The blood saved at venesection had not any inflammatory crust; in warm weather, it was florid like arterial blood, and continued in one soft homogeneous-like mass, without any separation of the serum after it was cold. When there was any separation, the crassamentum was of a very lax texture. The stools, after the first day, were fetid, inclined to a black colour, and were very rarely bilious, soft, or liquid, excepting when forced by art; for an obstinate costiveness attended the febrile state. The urine was discharged in a large quantity, was pale, sometimes limpid, and rarely of a higher than a straw colour, except when the weather was very warm, and then it was more saturated, of a deep colour, and discharged in smaller quantities. It had a large cloud, except when it was very pale or limpid; but more generally it had a copious white sediment, even on the first day of the fever. On the second day, the urine continued to be discharged very copiously; in some it was then turbid, and deposited a more copious sediment than on the first day: this sediment was sometimes of a brownish colour; in which case it was generally followed by bloody urine, either about the end of the second or beginning of the third day.—The colour and quantity of the urine, discharged in equal times, were remarkably variable, being now limpid, then of a deeper colour, now discharged in a larger, then in a smaller quantity; which could not be ascribed to any change made either in the quantity or quality of the drink, &c.

The fever accompanied with those symptoms terminated on the third day, or generally in less than 72 hours from the first attack, not by any assimilation or coction and excretion of the morbid matter: for if by the latter, there would have been some critical discharge by sweat, urine, stool, or otherwise, none of which happened; and if by the former, nothing then would have remained but great debility. This fever,

however, did not terminate in either of these salutary ways, excepting in some, who were happy enough to have the disease conquered in the beginning by proper evacuations, and by keeping up a plentiful sweat, till the total solution of the fever, by proper mild diaphoretics and diluents. But those who had not that good fortune, however tranquil things might appear at this period (as great debility, and a little yellowness in the white of the eyes, seemed then to be the chief complaint, excepting when the vomiting continued), yet the face of affairs was quickly changed: for this period was soon succeeded by the second *stadium*; a state, though without any fever, much more terrible than the first: the symptoms in which were the following. The pulse, immediately after the recess of the fever, was very little more frequent than in health, but hard and small. However, though it continued small, it became, soon afterwards, slower and very soft; and this softness of the pulse remained as long as the pulse could be felt. In many, in this stage of the disease, the pulse gradually subsided, until it became scarce perceptible; and this, notwithstanding all the means used to support and fill it; and when this was the case, the icteritious-like suffusion, the vomiting, delirium, restlessness, &c. increased to a great degree. In some, the pulse, after being exceedingly small and scarce perceptible, recovered considerably its fullness; but that favourable appearance was generally of but short continuance. The heat did not exceed the natural animal-heat; and when the pulse subsided, the skin became cold, and the face, breast, and extremities acquired somewhat of a livid colour. The skin was dry when the weather was cold, but was moist and clammy when the weather was hot. The respiration was natural, or rather slow. The tongue was moist, and much cleaner than in the former stage; its tip and edges, as also the gums and lips, were of a more florid red colour than usual. Very few complained of thirst, though they had a great desire for cold liquors. The vomiting or retching to vomit increased, and in some was so constant that neither medicines nor aliment of any kind were retained. Some vomited blood; others only what was last exhibited, mixed with phlegm; and others again had what is called the *black vomit* (A). The retching to vomit continued a longer or shorter time according to the state of the pulse; for as that became fuller, and the heat greater, the retching to vomit abated, and *è contra*. The inquietude was very obstinate; and when they dozed, their slumbers were but short and unrefreshing. There were some who were drowsy; but these always awaked, after the shortest slumbers, with a great dejection of spirits and strength.

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(A) That which is called the *black vomit* at first sight appears to be black; but on a more careful examination, it was observed that this colour proceeded from a great quantity of small flakey black substances which floated in the liquor thrown up by vomiting; but the colour of this liquor was much the same with that which the patient had last drank, and was by no means black. Those black flakey substances are the bile mixed with, or adhering to the mucus which lined the stomach. For, upon dissection of those who died of this disease, it was always observed that the mucus of the stomach was abraded, and the bile in its cystis was black and sometimes very viscid. In a lad who died of this disease in the beginning of the fourth day, and who was immediately opened, the bile was not only black, but had the consistence of thick venice-turpentine, and was exceedingly tough. On the inside of the stomach, there were several carbuncles or gangrenous specks. And in all those who were dissected, and had died of this disease, the same appearances were not only always observed, but likewise the blood was very fluid, and the vessels of the viscera were much distended.

Febris

The jactations or restlessness were surprising: it was frequently scarce possible to keep the patients in bed; though, at the same time, they did not complain of any anxiety or uneasiness; but if asked how they did, the reply was, *Very well*. The debility was so great, that, if the patient was raised erect in the bed, or, in some, if the head was only raised from the pillow, while a cup of drink was given, the pulse sunk immediately, and became sometimes so small, that it could scarce be felt; at this time, they became cold, as in a horripilation, but without the aserine-like skin: their lips and skin, especially about the neck, face, and extremities, together with their nails, acquired a livid colour. The delirium returned and increased; it was generally constant in those whose pulse was small and subsiding. The inflammation of the tunica conjunctiva or white of the eyes increased much, but without pain. A yellowness in the white of the eyes, if it did not appear before in the febrile state, became now very observable, and that icteritious-like colour was soon diffused over the whole surface of the body, and was continually acquiring a deeper saffron-like colour. In some indeed no yellowness was observable, excepting in the white of the eyes, until a little before death, when it increased very quickly, especially about the breast and neck. There were many small specks, not raised above the skin, which appeared very thick in the breast and neck, but less so in the extremities, and were of a scarlet, purple, or livid colour. In women the menstrua flowed, and sometimes excessively, though not at their regular period.

There was such a putrid dissolution of the blood in this stadium of the disease, that, besides the vomiting of blood formerly mentioned, and the bloody urine soon to be taken notice of, there were hæmorrhagies from the nose, mouth, ears, eyes, and from the parts which were blistered with cantharides. Nay, in the year 1739 and 1745, there were one or two instances of an hæmorrhagy from the skin, without any apparent puncture or loss of any part of the scarf-skin.

An obstinate costiveness continued in some; in others, the stools were frequent and loose; in some they were black, liquid, large, and greatly fatiguing; in others, when the stools were moderate, even though they were black, they gave great relief; in others, again, the stools nearly resembled tar in smoothness, tenacity, colour, and consistence.

The urine was discharged in a large quantity, in proportion to the drink retained by the patient: it was pale if the patient was not yellow; but if yellow, then it was of a deep saffron-colour: in either case, it had a sediment, or at least a large cloud, which remained at the bottom of the glass; in some, it was very turbid; in others it was bloody: and the quantity of blood discharged with the urine bore always some proportion to the state of the pulse; when that became fuller, the quantity of blood in the urine was diminished; when the pulse subsided, the bloody urine increased, and even returned after it had ceased some days, soon after the pulse became smaller. This stage of the disease continued sometimes seven or eight days before the patient died.

When this stadium of the disease terminated in health, it was by a recess or abatement of the vomit-

ing, hæmorrhagies, delirium, inquietude, jactations, Typhus. and icteritious-like suffusion of the skin and white of the eyes; while, at the same time, the pulse became fuller, and the patient gained strength, which, after this disease, was very slowly. But when it terminated in death, those symptoms not only continued, but sooner or later increased in violence, and were succeeded with the following, which may be termed the third *stadium* of the disease, which quickly ended in death. The pulse, though soft, became exceedingly small and unequal; the extremities grew cold, clammy, and livid; the face and lips, in some, were flushed; in others, they were of a livid colour; the livid specks increased so fast, that in some the whole breast and neck appeared livid; the heart palpitated strongly; the heat about the præcordia increased much; the respiration became difficult, with frequent sighing; the patient now became anxious, and extremely restless; the sweat flowed from the face, neck, and breast; blood flowed from the mouth, or nose, or ears, and in some from all those parts at once; the deglutition became difficult; the hiccoughs and subsultus of the tendons came on, and were frequent; the patients trifled with their fingers, and picked the naps of the bed-clothes; they grew comatous, or were constantly delirious. In this terrible state, some continued eight, ten, or twelve hours before they died, even after they had been so long speechless, and without any perceptible pulsation of the arteries in the wrists; whereas, in all other acute diseases, after the pulse in the wrists ceases, death follows immediately. When the disease was very acute, violent convulsions seized the unhappy patient, and quickly brought this stadium to its fatal end. After death, the livid blotches increased fast, especially about the face, breast, and neck, and the putrefaction began very early, or rather increased very quickly.

This was the progress of this terrible disease through its several stadia. But in hot weather, and when the symptoms in the first stage were very violent, it passed through those stages with such precipitation that there was but little opportunity of distinguishing its different stadia, the whole tragedy having been finished in less than 48 hours. It was remarkable, that, 1. The infection was increased by warm and lessened by cold weather. 2. The symptoms in the several stadia were more or less violent, according to the heat or coolness of the weather. In hot days, the symptoms were not only more violent, but in those who seemed in moderate weather to be on the recovery, or at least in no danger, the symptoms were all so greatly heightened, when the weather grew considerably warmer, as frequently to become fatal. In cool days, the symptoms were not only milder, but many who were apparently in great danger in hot days were saved from the very jaws of death by the weather becoming happily cooler. 3. The disease was generally more fatal to those who lay in small chambers not conveniently situated for the admission of fresh air, to those of an athletic and full habit, to strangers who were natives of a cold climate, to those who had the greatest dread of it, and to those who before the attack of the disease had overheated themselves by exercise in the sun, or by excessive drinking of strong liquors; either of which indeed

Febres

indeed seemed to render the body more susceptible of the infection. Lastly, the disease proved most certainly fatal to valetudinarians, or to those who had been weakened by any previous disease.

Although from the description which has now been given of the yellow fever, it may appear to be in many particulars very different from the remittent fever of warm climates; yet it is the opinion of many late writers of great accuracy, particularly of Dr John Hunter in his *Observations on the Diseases of the Army in Jamaica*, that it is to be considered only as a more dangerous form of the same disease. And there can be no doubt that the remittent fever not only appears in different seasons and situations with very different degrees of severity; but also that while the remittent fever prevails in its usual form in the West India islands, some individuals, particularly those who are newly arrived, will be affected with very remarkable yellowness, as well as bilious and black vomitings.

Causes of, and persons subject to, this disease. The yellow fever attacks principally Europeans, especially those who have but lately arrived in the hot climates. Negroes are entirely exempt from it, though the mulattoes and tawnies are as liable to be seized with it as the whites themselves. The cause of the disease seems to be a particular kind of contagion; but Dr Lind seems to be of opinion, that the immediate cause of the symptoms is a disposition in the glutinous part of the blood to separate from the others, and to become purulent. In some persons who have been bled in the yellow fever, the blood hath been observed prodigiously viscid; the crassamentum covered with a yellow gluten half an inch in thickness, and impenetrable to the finger unless cut by the nail; the serum being at the same time of the consistence of a thin syrup, and of a deep yellow tinge. This serum tasted bitter, and was taken for a composition of foot. The appearances on dissection, with his conclusions from them, we shall give in his own words: "In a man who died on the eleventh day of a yellow fever, whose body emitted no bad smell 36 hours after death, and was still yellow, I found all the bowels of the abdomen sound; the liver and spleen were remarkably so; as also the stomach and intestines. There was no suffusion of the bile either in the intestines or stomach. The gall-bladder, of the natural size, contained the usual quantity of bile, somewhat thicker than common, and grumous (B).

"Upon examining further, this disease was found to have lain wholly on the left side, where, within the breast, was found near a quart of yellowish water, in which were many large flakes of yellowish gluten, appearing, by comparison, precisely the same with the thick pellicle which had covered the blood taken from his arm. These flakes bore in several places a resemblance to a membranous substance beginning to be converted into a purulent jelly. The pleura, both on its inside and outside, as also its continuation, the investing membrane of the lungs (which in some parts

was greatly thickened), were covered with cakes of this gluten, hanging in some places loosely, in others adhering more strongly; and all in different states of yellow or purulent corruption. The right cavity of the breast, and all the other parts of his body, were found entirely free from disease.

"His complaints had been chiefly in his breast; and a small quantity of blood, taken from him two days before his death, was covered with an impenetrable, yellow, thick gluten; the red portion below it being quite loose.

"In those fevers, I have also seen the disease entirely confined to the heart and pericardium. In one who died the tenth day of the fever, without having been yellow, a quantity of pus and purulent crusts were found mixed with the water of the pericardium. The heart in different places was excoriated; and, together with the inside of the pericardium, was lined with a thick membranous cake, similar to that already mentioned on the lungs and pleura. In some places this cake had a purulent, in others a gelatinous, appearance, exactly resembling the coagulum of the blood. His complaints had been, a great oppression on the breast, and an extreme difficulty of breathing. In a third person, who died on the thirteenth day of the fever, above two quarts of pus and purulent jelly were found in the cavity of the belly. The source of such an extraordinary quantity of matter was not from any preceding inflammation, nor any imposthume, that we could discover; but from innumerable ulcerations on the surface of the intestines, omentum, mesentery, and peritoneum. Neither did those ulcerations (or excoriations, as they rather appeared in several places) seem to be the primary fountains of the matter, but to have been occasioned by its acrimony.

"This purulent appearance seems to arise merely from an extravasation of one of the component parts of the blood, the gluten or coagulable lymph. Blood taken from persons in a fever, and frequently even from persons in perfect health, after standing in a clean vessel for a short time, commonly separates into three distinct portions; viz. the serum, or water of the blood, the red concreted mass, and a viscid pellicle termed the *fize*, which spreads itself on the top of the red concretion. Some time ago, when making experiments with the blood taken from persons in the scurvy, I was surprised to find it often covered with that fizy crust. This induced me to extend my experiments to large quantities of blood from different subjects, which I had opportunities of inspecting at once in so large an hospital. For this purpose I one morning ordered ten patients in the scurvy to be bled, taking two ounces from each. A larger quantity was taken, for its inspection, from two men in health. That day I had occasion to prescribe bleeding to a woman in labour, two hours before her delivery; to a girl of sixteen years of age afflicted with a lunacy proceeding from the chlorosis; to three patients in the rheumatism; and to a person labouring under an obstruction of the liver.

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(B) In others who died in this yellow state, the bile in the gall-bladder was found of a thick ropy consistence like pitch, but the liver never appeared in the least affected. Dr Lind at first in several bodies opened the head only; but afterwards judged that all the cavities ought to be inspected.

Typhus.

"From a nice comparison, and an examination of the different blood, I found in general, that the more size there was on the top, and the thicker and more viscid this white pellicle showed itself, the concretion below it was of a more loose coherence. This was not so observable when only some slight white streaks appeared on the top. But when much size had separated itself, the red mass became very soft at the bottom of the vessel, and less compact in its different parts, in proportion to their distance from the surface, towards which this whitish portion had ascended.

"From this and from other experiments it appears, that this crust or pellicle is the natural gluten or cement of the blood (called by some the *coagulable lymph*), which becomes strongly disposed, in certain circumstances and diseases, to separate itself. And whereas the serum and red concretion are easily incorporated together, it will be found, that this glue, after its separation, becomes immiscible with either. We have, by gentle drying, converted it into a perfectly tough elastic membrane; and, by the means of a small portion of the red mass being left adhering to it, into a substance resembling muscular flesh; and it is capable of undergoing various changes into corruption, in the same manner as either of these.

"Now, I can see no reason why this gluten, in its morbid state, may not separate itself from the circulating blood, and be deposited in the cavities of the body, as readily as the serum does in dropsies; the former having always a less disposition than the latter to incorporate with the mass.

"In dissecting persons who died of fevers in London and Minorca, and where no infection was suspected, appearances similar to these have also fallen under the inspection of those accurate anatomists Drs Hunter and Cleghorn. Hence it may be presumed very difficult to distinguish fevers that are produced by infection, from some others. I cannot, however, be induced to think, as those gentlemen seem to do, that these preternatural substances which were found in the cavities of the body are the consequence, but rather that they are the cause, of the inflammation and excoriations. I believe these substances to be at first diseased extravasated gluten, and conjecture their different states greatly to depend upon the different times at which they were deposited.

"I have remarked, in a variety of dead bodies, three different kinds of extravasation; these occurred in such as had died of the scurvy, of consumption, and of fevers. In the former of those diseases, red coagulated blood is found extravasated in almost all parts of the body, not only into the tela cellulosa, but into the bellies of the muscles, particularly of the legs and thighs, which often become quite stuffed and even distorted with large grumous masses. The intestines and mesentery are often spotted also with extravasated blood; and I have seen large ecchymoses on the stomach. Those appearances at first sight resembled so many distinct mortifications; and by this appearance some anatomists have been deceived; but, upon a nice examination, the texture of the parts is found to be sound and firm. There is likewise, in that disease, sometimes, an extravasation of water, chiefly collected in, and always when in the legs confined to, the tela cellulosa.

Nº 204.

"But whereas, in the limbs of scorbutic persons, it is extremely difficult to make a good dissection by reason of such quantities of extravasated blood that every where obstruct the operator; so, on the contrary, the lower extremities of those who have died consumptive, with swelled legs, are, of all other subjects, in the best state to afford a satisfactory view of the muscles. The water inclosed in their legs having insinuated itself, by passing the tela cellulosa, into the spaces between the muscles, the muscles are easily separated from each other; and their several origins and insertions may be distinctly traced by means of their having been cleansed and washed by the water in the investing cellular membrane. Thus there are extravasations of three sorts; viz. first, the grumous mass in the scurvy; and this I have often remarked where no serum was observed. Secondly, the serum alone in anasarca swellings. The third and last is what was taken notice of in those who died of fevers, being the gluten of the blood, accompanied for the most part with some serum; both of them altogether confined in the large cavities of the body.

"I conjecture, that in those fevers there is always an ulcerous or purulent disposition in the blood; and that this gluten or coagulable lymph is greatly diseased. I have frequently seen it have a true purulent appearance soon after it was drawn off, when the patient seemed not very ill.

"And I further conjecture, that the mischief often lies within the breast; as also that the great benefit derived from the very early application of blisters, in a great measure flows from so many ulcerations and vents being timely provided for the free discharge of those purulent and tainted particles from the body.

"If an infection depends, as many have imagined, on the admission of certain foreign particles into the blood, this gluten seems to be its more immediate seat, and to be primarily affected by it; and a discharge of this, as though by washing those particles out of the body, tends in a great measure to remove the disease.

"It is an observation of the best practical writers, that issues and setons are most excellent preservatives against receiving an infection, nay, even that of the plague itself. And indeed a suppuration and plentiful discharge from a proper ulcer, whether produced by nature or by art, seems to open a channel the best appropriated for an exit out of the body to some of the most malignant poisons. Thus the most favourable crisis in the plague, and in most pestilential fevers, happens when nature excites tumors kindly suppurating in the groin or arm-pits, by whose beneficial and plentiful discharge the deadly poison is expelled from the constitution.

"I have observed it to be amongst the most certain characteristics of the worst fevers, that the blisters either do not rise and fill, or discharge such yellow, greenish, fetid, and highly offensive stuff, that even experienced nurses could give a pretty certain conjecture from the blisters, of the different degrees of malignity in the fever. We have more than once endeavoured to conceal the bad state of some patients in the hospital; but a discovery was always made of their condition in the wash-house, from the linen sent there stained with the discharges from the blistered parts.

And

Febres

And indeed a careful inspection of the state and discharge from the blisters, together with their effects, furnishes us, in those diseases, with some of the most certain diagnostics of their nature and prognostics of their event."

Prognosis. This distemper, where it attacks with violence, is generally fatal; the prognosis therefore must be commonly unfavourable, and always uncertain; neither can any thing more be said on this subject, than that an abatement of the symptoms already enumerated affords a favourable prognostic, and an increase of them the contrary.

Cure. The cure of this terrible disease, according to Dr Hillary, is very easy and simple. His indications are, 1. To moderate the too great and rapid motion of the fluids, and abate the too great heat and violence of the fever in the two first days of the disease, as much and as safely as we can. 2. To evacuate and carry out of the body as much of the putrid bile and other humours, and as expeditiously and safely as possible. 3. To put a stop to the putrescent disposition of the fluids, and to prevent the gangrenes from coming on, by suitable antiseptics.

The first indication is answered by bleeding, which, in the first stage of this fever, is absolutely necessary in some degree: the quantity to be taken away must be determined by the age and strength of the patients, the degree of plethora, fulness of the pulse, &c. When called in at the beginning, he orders 12, 14, 16, 18, or 20 ounces of blood to be taken away on the first or second day: and if the patient's pulse rise after the first bleeding, or if the fever still continue high and the pulse full, he repeats the bleeding once on the days above-mentioned. But bleeding a third time is seldom or never required; neither is bleeding on the third day almost ever necessary; and when it is performed on that day, it ought to be done with the greatest caution and judgment: neither should a vein be opened after the third day in this fever, unless some very extraordinary symptoms and circumstances require it; which seldom or never happen. On that day, indeed, the pulse generally sinks, and the blood is in such a dissolved state, that bleeding must be accounted highly pernicious. Nevertheless, it is indispensably necessary in the beginning of the distemper; and if omitted at that time, the violent heat and motion of the blood increase the putrescence of the humours to such a degree as to bring on the fatal consequences much sooner than would otherwise have happened.

After bleeding, we come to the second indication of cure, namely, to evacuate as much of the bilious and putrid humours as soon and as safely as we can. The great irritation of the stomach, by the putrid bilious humours constantly attending this fever, with almost continual retchings and violent vomitings, seem to indicate the giving of an emetic: but the stomach is always observed to be so violently stimulated and irritated and most commonly inflamed by the acrimony of the putrescent bile, that any emetic, even the most mild and gentle, given in the smallest dose, brings on an incessant vomiting, which continues, in spite of all remedies, till a mortification and death ensue. Instead of this, it is proper to give large draughts of warm water, which, without any additional stimulus to the

coats of the stomach, evacuates its acrid and putrid contents, commonly with great relief to the patient: the warm water also acts as an emollient focus to the inflamed coats of the stomach; and thus abates the inflammation, and prevents the gangrene and mortification from coming on.

After the patient has by this means vomited seven or eight times or oftener, and discharged a great quantity of yellow and blackish bilious matter as they often do, a grain or a grain and a half of thebaic extract is given in order to procure some respite from the violent retching, vomiting, and anxiety. The person is desired to take nothing into his stomach for two hours after this, by which means it is seldom or never rejected; and thus all the symptoms are considerably abated, the retching and vomiting either totally cease or are very much lessened, so that medicines may now be exhibited which the stomach would not have retained before. These are cooling acid juleps, or other antiseptic remedies; but neither nitre nor any of its preparations will commonly be found to stay on the stomach; nor are the nitrous medicines, or even the common anti-emetic draughts, proper to be given in this disease, even though they should agree with the stomach, on account of their attenuating property.

If the patient has not a stool or two after drinking the warm water and vomiting, it is necessary to give a gentle purging clyster; and when six or eight hours rest have been obtained, a gentle antiphlogistic and antiseptic purge, in order to evacuate by stool as much of the bilious matter as we possibly can. Or if the patient has a purging before, which sometimes though very rarely happens, a dose of toasted rhubarb is given, and an antiseptic anodyne after it has operated, to abate and check the too great purging, but not to stop it, as this evacuation has been always observed to be of service, provided it be not too violent.

After this indication is completely answered, the next is to exhibit such proper antiseptic medicines as may stop the putrescent disposition of the fluids. Here the Peruvian bark would seem to be the most proper remedy; but unluckily the stomachs of the patients in this disease are so much irritated, and so apt to reject every thing, that the bark cannot be retained in any form whatever. In this case Dr Percival recommends columbo-root, the infusion of which is found to be a powerful antiemetic and antiputrescent medicine, and might perhaps so far alter the state of the stomach as to make it bear the bark. Dr Hillary, however, who was ignorant of the virtues of columbo, substituted the *radix serpentaria Virginianæ* with success. A slight infusion of this root not only sat easily on the stomach of the patients, but moderately raised the pulse and fever, both of which are now too low. The following receipt was found the most agreeable and efficacious.

R. Rad. serpent. Virginian. ℥ii.

Croc. Ang. ʒfs. M. et infunde vase clauso in aq. bul. q. per horam unam ut col. ʒvi. Adde aq. menth. simp. ʒii. Vin. Maderiens. ʒiv. Syr. croc. vel syr. e mecon. ʒi. Elix. vitriol. acid. q. s. ad grat. acidior. sapor. Exhibe cochlearia duo vel tria singulis horis vel bihoris, vel sæpius pro re nata.

By the use of this medicine, and soft light nourishment taken in small quantities, the pulse is usually kept

Typhu.

up and the distemper goes off. But if, after taking this a little while, we find that the pulse does not rise, but on the contrary that a coldness of the extreme parts comes on, the medicines must be made more warming, by increasing the quantity of the snake-root and saffron, or by adding *vinum croceum*, *confectio cardiaca*, or the like, but not by the use of volatile spirits and salts, which hurt by their stimulating and dissolving qualities. Blisters our author reprobates in the strongest terms, and affirms that he has seen the place where a blister was applied turned perfectly black and sphacelated; so that if the spine and end of the ribs had not hindered, a large square passage would have been opened into the cavity of the thorax, had the patient lived a few hours after it.

At the same time that the strength of the patient is kept up by the medicines above-mentioned, or by others similar, he gave repeated gentle purgatives every second or third day, and sometimes, when the symptoms were very urgent, every day, for four or five days successively. But if proper methods be taken in the beginning of the disease, it is seldom that such a repetition of purging is necessary; and the Doctor gives the following remarkable instance of the efficacy of this method of treating the disease: "A young man about 24 years of age, surgeon to a Guinea ship, was brought into a house where I was visiting a patient; he was of a sanguine robust constitution, and a lover of spirituous liquors, and had been drunk three days and nights successively, and in that condition had run several races on the hot sea-shore, near noon, with the sailors, in the heat of the sun; and to complete his folly, lay the last night, after that exercise, in the open air under a tamarind-tree all the night, where he was seized in the morning with all the symptoms of this fever, in the most violent manner that I have ever seen any one. In this condition he was brought to the house where I was: his retching and vomiting were so incessant, that he could not get time to say yes, or no, to the questions which I asked, without waiting some time for it, each time; his eyes were red and inflamed, attended with a burning heat, as usual in the beginning of this fever; and he had all the other symptoms which attend the first attack of this fever in the most violent manner, which I need not repeat. I ordered ℥xvi . of blood to be taken from him, which was very florid, thin, and much dissolved; and then directed him to drink warm water freely, and to vomit eight or ten times; and after that to take *extra. Thebaic.* gr. jss. and take nothing for two hours after it. But I being gone, and he finding that he vomited with more ease, less sickness and retching, with the warm water, than he did before, and being much alarmed at his having this fever, he drank three gallons of the water, and brought up great quantities of yellow and blackish bilious matter with it, and washed his stomach effectually. He then took the *extr. thebaic.* and slept three or four hours after it; and the vomiting ceased: he took some panada, and four hours after that the purge of manna and tamarinds, &c. which gave him eight stools, and carried a good deal more of the putrid bilious matter off downwards; and got some rest after it: he then took of an antiseptic julep often, and light nourishment, a little acid, at the intervals; and repeated the purge on the third day, as directed.

Being called out of the town, I did not see him till the fourth morning after; he said that he had followed my directions; and I found him free from the fever and all its symptoms, but weak and low, and his skin a little yellow, but much less so than usual, unless when the bilious matter is thus carried off. I ordered him to take *elix. vitrioli acid. gut. lx.* three or four times a-day for a few days, in an infusion of mint-leaves with a little snake-root, made as tea; which he did, and soon recovered perfectly well in seven or eight days time.

"This patient being seized in so violent a manner, and recovering in so short a time, and so near to the rule which the elegant Celsus recommends, *Citò, tutò, et jucundè*, not only confirmed the above manner of reasoning on the cause and nature of this disease to be right, but made me determine to follow the same method as near as I possibly could ever since, and I must add, with the same good success also, when I am called so early in the disease that I can strictly pursue it: which is too seldom the case; for in general the physician is not called till the fourth or fifth day, or after, when the putrid acrid bilious matter is a great part of it carried into the blood, which it has so dissolved and brought its whole mass into a colliquated, putrid, gangrenescent state, that the best of methods, and the most efficacious medicines, however judiciously timed and applied, are precarious and uncertain; or sometimes it is so far advanced, that the ablest physician can do no more than tell the relations of the sick that it is too late, and that they can live but a few hours: for I know no disease in which the recovery of the patient so much depends upon the right or wrong method of treating it, at the very first attack or beginning of the disease, as this fever does: for by thus discharging and carrying the putrid, acrimonious, bilious matter, out of the body before much of it is carried into the blood, not only most of the bad symptoms which attend the second state of the fever are prevented from coming on, but the hæmorrhagies, and the yellowness of the skin, &c. also, and the fever soon taken off too; for I have never seen any hæmorrhagy come on, and but little yellowness, or in some none, when they were thus treated.

"And when the last stage of this fever is come on before we are called in, provided that it is not at the very latter end of it, I have always found that this method of gentle purging, whenever the before-mentioned symptoms indicate it, and a liberal use of the antiseptic medicines in the intervals, has been so successful, that I have seen but two patients that have died in this fever during the eight years past in which I treated it in this manner; and one of them was so weak that he could not take a spoonful of any thing, and so near his end that he died about two hours after without taking any medicine; and the other killed himself by drinking a gallon of cold water in less than three hours time (after taking half an ounce of manna in the morning), which struck such a coldness into his whole body that he died; though I have visited several every year, and in some years a great many: therefore I take the liberty of recommending this method to others, and wish it to be as successful to all."

To the genus of *typhus* also belong all those fevers attended with very profuse and debilitating sweats, and which

Febres which have sometimes, not without good reason, been accounted plagues; such as the English sweating sickness, Miliaris sudatoria, *Sauv.* sp. 5. Ephemera sudatoria, *Sauv.* sp. 7. Ephemera Britannica, *Caius de ephem. Britan.*

169

GENUS VI. SYNOCHUS.

Synochus *Sauv.* gen. 81. *Lin.* 13.

Lenta *Lin.* 14.

Phrenitis *Vog.* 18.

Febris continua putrida *Boerb.* 730.

THIS is a contagious distemper, being a complication of a synocha and typhus; for the description and cure of which, we must of consequence refer to what hath been already said concerning these diseases.

The Hætic FEVER.

170

Hætica, *Sauv.* gen. 83. *Lin.* 24. *Vog.* 80. *Sag.* 684.

THIS disease is reckoned by Dr Cullen to be merely symptomatic; as indeed seems very probable, since it very generally accompanies absorptions of pus into the blood from internal suppurations, or indeed from such as are external, provided they be very large or of a bad kind.

Description. The best, indeed the only proper, description of this disorder we have is that by Dr Heberden. According to him, the appearance of the hætic fever is not unlike that of the genuine intermittent; from which, however, the disease is very different in its nature, while at the same time it is much more dangerous. In the true intermittent, the three stages of cold, heat, and sweat, are far more distinctly marked, the whole fit is much longer, the period which it observes is more constant and regular, and the intermissions are more perfect, than in the hætic fever. For in the latter, even in the clearest remission, there is usually a feverish quickness perceptible in the pulse, which seldom fails to exceed the utmost limit of a healthy one by at least 10 strokes in a minute.

The chillness of the hætic fever is sometimes succeeded by heat, and sometimes immediately by a sweat without any intermediate state of heat. The heat will sometimes come on without any remarkable chillness preceding; and the chillness has been observed to go off without being followed either by heat or sweat. The duration of these stages is seldom the same for three fits together; and as it is not uncommon for one of them to be wanting, the length of the whole fit must vary much more than in the true intermittent; but in general it is much shorter.

A patient subjected to hætic fever is little or nothing relieved by the coming on of the sweat; but is often as anxious and restless under it as during the chillness or heat. When the sweat is over, the fever will sometimes continue; and in the middle of the fever the chillness will return; which is a most certain mark of this disease.

The hætic fever will return with great exactness, like an intermittent, for two or perhaps three fits; but Dr Heberden informs us, that he does not remember ever to have known it keep the same period for four fits successively. The paroxysm will now and then keep off for 10 or 12 days; and at other times, especially

when the patient is very ill, it will return so frequently on the same day, that the chillness of a new fit will follow immediately the sweat of the former. It is not unusual to have many threatenings of a shivering in the same day; and some degree of drowsiness is apt to attend the cessation of a fit.

The urine in a true intermittent is clear in the fits and turbid in the intervals; but in the hætic fever it is liable to all kinds of irregularity. It will be equally clear or turbid in both stages; or turbid in the fits and clear in the intervals; and sometimes it will be, as in a true intermittent, clear during the fever, and thick at the going off.

Hætic patients often complain of pains like those of the rheumatism, which either affect by turns almost every part of the body, or else return constantly to the same part; which is often at a great distance from the seat of the principal disorder, and, as far as is known, without any peculiar connection with it. Those pains are so violent in some patients, as to require a large quantity of opium. As far as Dr Heberden has observed, they are most common, where the hætic arises from some ulcer open to the external air, as in cancers of the face, breast, &c. Joined with this fever, and arising probably from one common cause, he has been surprised to see swellings of the limbs, neck, or trunk of the body, rise up almost in an instant, as if the part was all at once grown fatter. These swellings are not painful, hard, or discoloured, and they continue for several hours.

Dr Heberden has seen this fever attack those who seemed in tolerable health, in a sudden and violent manner, like a common inflammatory one; and like that, also, in a very short time bring them into imminent danger of their lives; after which it has begun to abate, and to afford hopes of a perfect recovery. But though the danger might be over for the present, and but little of a fever remain; yet that little has soon demonstrated, that it was kept up by some great mischief within, and, proving unconquerable by any remedies, has gradually undermined the health of the patient, and never ceased except with his life. This manner of its beginning, however, is extraordinary. It much oftener dissembles its strength at first; and creeps on so slowly, that the subjects of it, though they be not perfectly well, yet for some months hardly think themselves ill; complaining only of being sooner tired with exercise than usual, of want of appetite, and of falling away. But gentle as the symptoms may seem, if the pulse be quicker than ordinary, so as to have the artery to beat 90 times and perhaps 120 times in a minute, there is the greatest reason to be apprehensive of the event. In no disorder, perhaps, is the pulse of more use to guide our judgment than in the hætic fever: yet even here we must be upon our guard, and not trust entirely to this criterion; for one in about 20 patients, with all the worst signs of decay from some incurable cause, which irresistibly goes on to destroy his life, will show not the smallest degree of quickness, nor any other irregularity of the pulse, to the day of his death.

Causes, &c. This fever will supervene whenever there is a great collection of matter formed in any part of the body; but it more particularly attends upon the

Hætica.

Febres

inflammation of a scirrhus gland, and even upon one that is slight and only just beginning; the fever growing worse in proportion as the gland becomes more inflamed, ulcered, or gangrenous. And such is the lingering nature of those glandular disorders, that the first of those stages will continue for many months, and the second for some years.

If this scirrhus inflammation be external, or in the lungs, or some of the abdominal viscera, where the disturbance of their functions plainly points out the seat of the disorder, no doubt can be entertained concerning the cause of the fever. But if the part affected be not obvious to the senses, and its precise functions be not known, the hectic, which is there only part of the train of another disease, may be mistaken for the primary or only one.

Lying-in women, on account of the violence sustained in delivery, generally die when affected with this fever. Women of the age of near 50 and upwards are particularly liable to it. For, upon the cessation of their natural discharge, the glands of the breasts, ovaries, or womb, too commonly begin to grow scirrhus, and proceed to be cancerous. Not only these, but the glandular parts of all the abdominal viscera, are disposed to be affected at this particular time, and to become the seats of incurable disorders.

The injuries done to the stomach and liver by hard drinking are attended with similar symptoms, and terminate in the same manner.

Dr Heberden observes, that the slightest wound by a fine pointed instrument is known upon some occasions to bring on the greatest disturbances, and the most alarming symptoms, nay even death itself. For not only the wounded part will swell and be painful, but by turns almost every part of the body; and very distant parts have been known to come even to suppuration. These symptoms are constantly accompanied with this irregular intermittent, which lasts as long as any of them remain.

Prognosis. This anomalous fever is never less dangerous than when it belongs to a kindly suppuration, into which all the diseased parts are melted down, and for which there is a proper outlet.

The symptoms and danger from some small punctures, with their concomitant fever, most frequently give way in a few days; though in some persons they have continued for two or three months, and in others have proved fatal.

The inflammation of internal scirrhus glands, or of those in the breasts, sometimes goes off, and the fever, which depended upon it, ceases; but it much oftener happens, that it proceeds to cancerous and gangrenous ulcers, and terminates only in death. Death is also, almost universally, the consequence of hectic fever from tubercles of the lungs, which have in general at least been considered as glandular bodies in a scirrhus state.

Cure. It is not to be expected that the same remedies will in every case be adapted to a fever which, arising from very different causes, is attended with such a variety of symptoms. A mixture of asafetida and opium has in some persons seemed singularly serviceable in this fever, when brought on by a small wound; but in most other cases the princi-

pal if not the sole attention of the physician must be employed in relieving the symptoms, by tempering the heat, by preventing both costiveness and purging, by procuring sleep, and by checking the sweats. If, at the same time, continues Dr Heberden, he put the body into as good general health as may be, by air, exercise, and a proper course of mild diet, he can perhaps do nothing better than to leave all the rest to nature. In some few fortunate patients, nature appears to have such resources, as may afford reason for entertaining hopes of cure, even in very bad cases. For some have recovered from this fever attended with every symptom of an abdominal viscus incurably diseased, after all probable methods of relief from art had been tried in vain; and after the flesh and strength were so exhausted as to leave scarce any hopes from nature. In those deplorable circumstances, there has arisen a swelling not far from the probable seat of the disorder, and yet without any discoverable communication with it. This swelling has come to an abscess; in consequence of which the pulse has soon returned to its natural state, as have also the appetite, flesh, and strength. What nature has performed in those rare cases, Dr Heberden acquaints us, he has often endeavoured to imitate, by making issues or applying blisters near the seat of the disease; but he cannot say with the same success.

It seems at present, Dr Heberden observes, the opinion of many practitioners, that the gangrenes will be stopped, and suppuration become more kindly, by the use of Peruvian bark; and therefore this remedy is always either advised or permitted in the irregular fever joined with suppurations and gangrenes. But he affirms he does not remember ever to have seen any good effect from the bark in this fever unattended with an apparent ulcer; and even in gangrenes it so often fails, that in successful cases, where it has been administered, there must be room for suspicion that the success was owing to another cause. Dr Heberden acknowledges at the same time, that he never saw any harm from the bark, in these, or indeed in any other cases, except a slight temporary purging or sickness, where it has happened to disagree with the stomach, or where the latter has been loaded by taking the medicine too fast, especially in dry boluses wrapped in wafer-paper.

In hectic illnesses, where all other means have proved ineffectual, a journey to Bath is usually proposed by the friends, and wished for by the sick; but Dr Heberden justly observes, that, besides the fatigue and many inconveniences of a journey to a dying person, the Bath waters are peculiarly hurtful in this fever, which they never fail to increase, and thereby aggravate the sufferings and hasten the death of the patient.

ORDER II. PHLEGMASIÆ.

Phlegmasiæ membranosæ et parenchymatosæ, Sauv.

Class III. Ord. I. II. Sag. 605.

Morbi febriles phlogistici, Lin. Class III.

Febres continuæ compositæ inflammatoriæ, V.

Morbi acuti febriles, Boerb. 770.

Febres inflammatoriæ, Hoffm. II. 105. Junck. 61.

The phlegmasiæ, or topical inflammations, are a very numerous assemblage of diseases. Their great

Hectica.

Phlegma-
sia

characteristics are, the general symptoms of fever, and a topical inflammation, attended with the lesion of some important function. And in most instances, when blood is drawn, it is found upon coagulation to be covered with a buffy coat. Under this order, many important genera are comprehended, each requiring a separate consideration.

172

173

GENUS VII. PHLOGOSIS.

Sp. I. PHLOGOSIS PHLEGMONE.

Phlegmone auctorum, *Sauv.* gen. 15. *Lin.* 39. *Vog.* 351.

Inflammatio, *Lin.* 231. *Boerb.* 370. *Junck.* 20.

This disease is a synocha fever, accompanied with an inflammation of some particular part either external or internal, and consequently it varies very much in its form and the degree of danger attending it, according to the situation and functions of the part affected with topical inflammation. To this species, therefore, belong the following diseases.

Furunculus, *Sauv.* gen. 18. *Vog.* 352.

Terminthus, *Vog.* 381.

Pupula, *Lin.* 275. *Sauv.* p. 6.

Varus, *Vog.* 436. *Lin.* 269. *Sauv.* p. 7.

Bacchia, *Lin.* 270.

Gutta Rosea, *Sauv.* gen. 4.

Gutta rosacea, *Vog.* 437.

Hordeolum, *Sauv.* gen. 27. *Lin.* 276. *Vog.* 434.

Otalgia, *Sauv.* gen. 197. *Lin.* 44. *Vog.* 148.

Dolor otalgicus, *Hoffm.* II. 336.

Parulis, *Vog.* 362.

Mastodynia, *Sauv.* gen. 210. *Vog.* 153.

Paronychia, *Sauv.* gen. 21. *Lin.* 258. *Vog.* 345.

Arthrocace, *Sauv.* gen. 78. *Lin.* 256.

Pædarthrocace, *Vog.* 419.

Spina ventosa, *Boerb.* 526.

Phimosis, *Sauv.* gen. 22. *Lin.* 297. *Vog.* 348.

Paraphimosis, *Vog.* 349.

For the cure of inflammations, Dr Cullen lays down the following indications. 1. To remove the remote causes when they are evident and continue to operate. 2. To take off the phlogistic diathesis affecting the whole system, or the particular part. 3. To take off the spasm of the particular part by remedies applied to the whole system or to the part itself.

The means of removing the remote causes will readily occur, from considering the particular nature and circumstances of the different kinds. Acrid matters must be removed, or their action must be prevented, by the application of demulcents. Compressing and overstretching powers must be taken away; and from their several circumstances, the means of doing so will be obvious.

The means of taking off the phlogistic diathesis of the system are the same with those already mentioned under the cure for synocha. The means of taking off the spasm also from the particular part, are much the same with those already mentioned. Only it is to be remembered, that topical bleedings, such as cupping with scarifications, applying leeches, &c. are in this case much more indicated; and that some of the other remedies are to be directed more particularly to the part affected, as shall be more fully considered when we treat of those diseases attended with particular inflammations.

When a tendency to suppuration is perceived, the proper indication is to promote the production of perfect pus as much as possible. For this purpose various remedies, supposed to possess a specific power, have been proposed; but it does not appear that any of them are possessed of a virtue of this kind; and, in Dr Cullen's opinion, all that can be done is to favour the suppuration by such applications as may support a moderate heat in the part, by some tenacity confine the perspiration, and by an emollient quality may weaken the cohesion of the teguments, and favour their erosion. As all abscesses are occasioned by the effusion of fluids, and as in the case of certain effusions a suppuration becomes not only unavoidable but desirable, it may be supposed that most of the means of procuring a resolution by diminishing the force of circulation, &c. ought to be avoided. But as we observe on the one hand, that a certain degree of increased impetus, or of the original symptoms of inflammation, is necessary to produce a proper suppuration; so it is then especially necessary to avoid those means of resolution which may diminish too much the force of circulation. And on the other hand, as the impetus of the blood, when violent, is found to prevent the proper suppuration; so, in such cases, though a tendency to suppuration may have begun, it may be proper to continue those means of resolution which moderate the force of the circulation. With respect to the opening of abscesses when completely formed, see the article SURGERY.

When an inflammation has taken a tendency to gangrene, that event is to be prevented by every possible means; and these must be different according to the nature of the several causes: but after a gangrene has in some degree taken place, it can be cured only by the separation of the dead from the living parts. This in certain circumstances can be performed, and most properly, by the knife. In other cases it can be done by exciting a suppuratory inflammation on the verge of the living part, whereby its cohesion with the dead part may be every where broken off, so that the latter may fall off by itself. While this is doing, it is proper to prevent the further putrefaction of the part, and its spreading wider. For this purpose various antiseptic applications have been proposed: but Dr Cullen is of opinion, that while the teguments are entire, these applications can hardly have any effect; and therefore, that the fundamental procedure must be to scarify the part so as to reach the living substance, and, by the wounds made there, to excite the suppuration required. By the same incisions also we give access to antiseptics, which may both prevent the progress of the putrefaction in the dead, and excite the inflammation necessary on the verge of the living parts.

When the gangrene proceeds from the loss of tone, and when this communicated to the neighbouring parts prevents that inflammation which, as we have said, is requisite to the separation of the dead parts from the living, it will be necessary to obviate this loss of tone by tonic medicines given internally; and for this purpose the Peruvian bark has been found to be most effectual. But when the gangrene arises from the violence of inflammation, the bark may not only fail of proving a remedy, but may do harm: for its power as a tonic is especially suited to those cases of gangrene which proceed from an original loss of tone, as in the

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Phlegma-
sia

case of palsy and œdema; or in those cases where a loss of tone takes place while the original inflammatory symptoms are removed.

On the other hand, Mr Bell is of opinion, that incisions made with a view to admit the operation of antiseptic remedies in gangrenes, as well as the remedies themselves, must be pernicious from the irritation they occasion, and from the danger of wounding blood-vessels, nerves, tendons, and also by allowing a free passage for the putrescent fluids into the parts not yet affected. And unless they be carried so deep as to reach the sound parts, applications of the antiseptic kind can never have any effect in answering the purpose for which they were intended. The same author also remarks, that all the advantages commonly observed from the great number of applications recommended for gangrene, are obtained with more ease, and generally too with more certainty, from the use of some gentle stimulating embrocation; which, by exciting a slight irritation upon the surface, especially when assisted by a free use of the Peruvian bark, produces for the most part such a degree of inflammation as is wished for. With this view he has frequently known a weak solution of sal ammoniac, a drachm of the salt to two ounces of vinegar and six of water, form a mixture of a very proper strength for every purpose of this kind. But the degree of stimulus can easily be either increased or diminished according to circumstances, by using a larger or smaller proportion of the salt.

Whenever, either by the means recommended, or by a natural exertion of the system, a slight inflammation appears between the diseased and sound parts, we may in general, with tolerable certainty, expect, that in due time the parts will be separated; and when a full suppuration is once fairly established, there can be little doubt that the mortified parts will be soon and easily removed.

A complete separation being effected, the remaining sore is to be treated in the manner described under the article SURGERY; with a proper attention, at the same time, to the support of the general system by the continuance of a nourishing diet, and the bark with such quantities of wine as may seem necessary.

With regard to the bark, however, it is proper to take notice of another case of mortification in which it is likewise unsuccessful, as well as in that attended with an high degree of inflammation; and that is, in those mortifications of the toes and feet, common in old people, or which arise from any cause increasing the rigidity of the vessels to such a degree as to prevent the motion of the fluids through them. In this case Mr Pott has discovered, that all kinds of warm applications are very unsuccessful; but that by the free use of opium, together with sedatives and relaxants externally applied, he has frequently seen the tumefaction of the feet and ankles subside, the skin recover its natural colour, and all the mortified parts separate in a very short time, leaving a clean sore. But as to scarifications, or any other attempt to separate artificially the mortified from the sound parts, he thinks them very prejudicial, by giving pain; which is generally of itself violent in this disease, and which seems to have a great share in producing the other evils.

The other terminations of inflammation either do not admit of any treatment except that of preventing

them by resolution, or properly belong to the article *Phlogosis*, SURGERY.

Sp. II. PHLOGOSIS ERYTHEMA.

174

- Erythema, *Sauv.* gen. 11.
- Erysipelas auctorum, *Vog.* 343.
- Hieropyr. *Vog.* 344.
- Anthrax, *Sauv.* gen. 19. *Lin.* 272. *Vog.* 353.
- Carbo et carbunculus auctorum.
- Erythema gangrænosum, *Sauv.* sp. 7.
- Erythema a frigore.
- Erythema pernio, *Sauv.* sp. 4.
- Pernio, *Lin.* 259. *Vog.* 350.
- Erythema ambustio, *Sauv.* sp. 2.
- Erysipelas ambustio, *Sauv.* sp. 4.
- Combustura, *Lin.* 245.
- Combustio, *Boerb.* 476.
- Encaufis, *Vog.* 347.
- Erythema ab acri alieno applicato.
- Erysipelas Chinense, *Sauv.* sp. 7.
- Erythema ab acri inquilino.
- Erythema intertrigo, *Sauv.* sp. 5.
- Intertrigo, *Lin.* 247. *Vog.* 502.
- Erythema a compressione.
- Erythema paratrima, *Sauv.* sp. 6.
- Erythema a punctura, *Sauv.* sp. 9.
- Erysipelas a vespiis, *Sauv.* sp. 19.
- Ptydracia a vespiis, *Sauv.* sp. 2.
- Erythema cum phlegmone.
- Erysipelas phlegmonodes auctorum.
- Erythema cum œdemate.
- Erysipelas symptomaticum, *Sauv.* sp. 6.

The word *erythema* doth not apply to any primary disease, but to a great number of those cutaneous inflammations denominated by another general term, viz. the *erysipelas*, or "St Anthony's fire;" and which being commonly symptomatic, of some other inflammation or disorder, are to be removed only by removing the primary disease: the *erythema* is found scarcely to bear any kind of warm application to itself; and is very apt, if treated as a primary disease, to terminate in a gangrene of the part affected, or some other disorder still more dangerous. The difference between the *phlegmon* or preceding species, and *erythema*, according to Dr Cullen, is, that, in the former, the inflammation seems particularly to affect the vessels on the internal surface of the skin, communicating with the lax adjacent cellular texture; whence a more copious effusion, and that too of serum convertible into pus, takes place. In the *erythema* the affection is of the vessels on the external surface of the skin communicating with the *rete mucosum*, which does not admit of any effusion but what separates the cuticle and gives occasion to the formation of a blister, while the smaller size of the vessels admits only of the effusion of a thin fluid very seldom convertible into pus. For the cure of the fever attended with *erythema* or *erysipelas*, see below; and for the external treatment of *erythema*, see the article SURGERY.

GENUS VIII. OPHTHALMIA.

Inflammation of the EYES.

175

- Ophthalmia, *Sauv.* gen. 196. *Lin.* 43. *Vog.* 341.
- Sag.* 231. *Junc.* 24.
- Chemosis, *Vog.* 46.

Phlegma-
fiaOphthalmites, *Vog.* 47.Inflammatio oculorum, *Hoffm.* II. 165.Ophthalmia taraxis, *Sauv.* sp. 1.Ophthalmia humida, *Sauv.* sp. 8.Ophthalmia chemosis, *Sauv.* sp. 12.Ophthalmia erysipelatoſa, *Sauv.* sp. 7.Ophthalmia pustuloſa, *Sauv.* sp. 6.Ophthalmia phlyctænodes, *Sauv.* sp. 21.Ophthalmia chorocidea, *Sauv.* sp. 13.Ophthalmia tenebricoſa, *Sauv.* sp. 10.Ophthalmia trachoma, *Sauv.* sp. 4.Ophthalmia ficca, *Sauv.* sp. 5.Ophthalmia angularis, *Sauv.* sp. 14.Ophthalmia tuberculoſa, *Sauv.* sp. 3.Ophthalmia trichiaſis, *Sauv.* sp. 2.Ophthalmia cancroſa, *Sauv.* sp. 15.Ophthalmia a ſynechia, *Sauv.* sp. 16.Ophthalmia a lagophthalmo, *Sauv.* sp. 17.Ophthalmia ab elcomate, *Sauv.* sp. 18.Ophthalmia ab ungue, *Sauv.* sp. 19.Ophthalmia a cornæ fiſtula, *Sauv.* sp. 20.Ophthalmia uveæ, *Sauv.* sp. 22.Ophthalmia metaſtatica, *Sauv.* sp. 24.Ophthalmia ſcrophuloſa, *Sauv.* sp. 9.Ophthalmia ſyphilitica, *Sauv.* sp. 11.Ophthalmia febricoſa, *Sauv.* sp. 23.

FROM reading this long liſt of diſtinctions which authors have invented in the ophthalmia, it is evident, that by far the greateſt part of them are ſymptomatic, or merely the conſequences of other diſorders preſent in the habit; and therefore the remedies muſt be directed towards the removal of theſe primary diſorders; and when they are gone the ophthalmia will be removed of courſe. Dr Cullen obſerves, that the inflammation of the eye may be conſidered as of two kinds; according as it is ſeated in the membranes of the ball of the eye, when it is named *ophthalmia membranarum*; or as it is ſeated in the ſebaceous glands placed in the tarſus, or edges of the eye-lids, in which caſe it may be termed *ophthalmia tarſi*. Theſe two kinds are very frequently connected together, as the one may excite the other; but they are ſtill to be diſtinguiſhed according as the one or the other may happen to be the primary affection.

1. The inflammation of the *membranes* of the eye affects eſpecially, and moſt frequently, the adnata, and appears in a turgeſcence of its veſſels; ſo that the red veſſels which are naturally there, become not only increased in ſize, but many more appear than in a natural ſtate. This turgeſcence of the veſſels is attended with pain, eſpecially upon the motion of the ball of the eye; and this irritation, like every other, applied to the ſurface of the eye, produces an effuſion of tears from the lacrymal gland.

The inflammation commonly, and chiefly, affects the adnata ſpread on the anterior part of the bulb of the eye; but uſually ſpreads alſo along the continuation of the adnata on the inſide of the palpebræ; and as that is extended on the tarſus palpebrarum, the excretories of the ſebaceous glands opening there are alſo frequently affected. When the affection of the adnata is conſiderable, it may be communicated to the ſubjacent membranes of the eye, and even to the retina itſelf; which thereby acquires ſo great ſenſibility,

that every impreſſion of light becomes painful. The inflammation of the membranes of the eye is in different degrees, according as the adnata is more or leſs affected, or according as the inflammation is either of the adnata alone, or of the ſubjacent membranes alſo; and upon theſe differences, different ſpecies have been eſtabliſhed; but they ſeem all to differ only in degree, and are to be cured by the ſame remedies more or leſs employed.

The proximate cauſe of ophthalmia is not different from that of inflammation in general; and the different circumſtances of ophthalmia may be explained by the difference of its remote cauſes, and by the different parts of the eye which it happens to affect; as may be underſtood from what has been already ſaid. We ſhall therefore proceed to give an account of the method of cure.

The great objects to be aimed at in the treatment of ophthalmia, are, in the firſt place, the reſolution of the inflammation which has already taken place; and, ſecondly, the removal of thoſe conſequences which frequently ariſe from the inflammation, eſpecially if it have been of long ſtanding. But beſides theſe, while it has appeared from former obſervation, that there is a peculiar diſpoſition to the diſeaſe, practices may often be ſucceſſfully employed to combat this diſpoſition, and thus prevent the return of the affection.

The ophthalmia membranarum requires the remedies proper for inflammation in general; and when the deeper-ſeated membranes are affected, and eſpecially when a pyrexia is preſent, large general bleedings may be neceſſary. But this laſt is ſeldom the caſe; and, for the moſt part, the ophthalmia is an affection merely local, accompanied with little or no pyrexia. General bleedings therefore have little effect upon it, and the cure is chiefly to be obtained by topical bleedings, that is, blood drawn from the veſſels near the inflamed part; and opening the jugular vein, or the temporal artery, may be conſidered as in ſome meaſure of this kind. It is commonly ſufficient to apply a number of leeches round the eye; but it is perhaps ſtill better to draw blood by cupping and ſcarifying upon the temples. In many caſes, the moſt effectual remedy is to ſcarify the internal ſurface of the inferior eye-lid, and to cut the turgid veſſels upon the adnata itſelf.

Beſides blood-letting, purging, as a remedy ſuited to inflammation in general, has been conſidered as peculiarly adapted to inflammation in any part of the head, and therefore to ophthalmia; and it is ſometimes uſeful: but, for the reaſons given before with reſpect to general bleeding, purging in the caſe of ophthalmia does not prove uſeful in any proportion to the evacuation excited.—For relaxing the ſpaſm in the part, and taking off the determination of the fluids to it, bliſtering near the part has commonly been found uſeful. When the inflammation does not yield to the application of bliſters after topical bleeding, great benefit is often obtained by ſupporting a diſcharge from the bliſtered part, under the form of an iſſue, by which means a more permanent determination of blood from the part is obtained.

It is probably alſo on the ſame principle that the good effects obtained from the uſe of errhine medicines in obſtinate caſes of ophthalmia are to be accounted for. By theſe errhines, in particular, which occaſion

and

Ophthal-
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Phlegma-
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and support for some time a great discharge from the nose, great benefit has often been obtained. The powder of asarabacca, or the infusion of hippocastanum, snuffed up the nose at bed-time in proper doses, are often productive of the best effects, when many other remedies have been tried in vain.

Ophthalmia, as an external inflammation, admits of topical applications. All those, however, which increase the heat and relax the vessels of the part, prove hurtful; and the admission of cool air to the eye, and the application of cooling and astringent medicines, which at the same time do not produce irritation, prove useful. Of all these the solution of acetated lead, assiduously applied, is perhaps the best. In the cure of this distemper, indeed, all irritation must carefully be avoided, particularly that of light; and the only certain means of doing this is by keeping the patient in a very dark chamber.

2. In the *ophthalmia tarfi*, the same medicines may be necessary, as have been already recommended, for the *ophthalmia membranarum*. However, as the *ophthalmia tarfi* may often depend upon an acrimony deposited in the sebaceous glands of the part, so it may require various internal remedies according to the variety of the acrimony in fault; for which we must refer to the consideration of scrophula, syphilis, or other diseases with which this ophthalmia may be connected; and where these shall not be evident, certain remedies more generally adapted to the evacuation of acrimony, such as mercury, may be employed. In the *ophthalmia tarfi*, it almost constantly happens that some ulcerations are formed on the tarsus. These require the application of mercury and copper, which alone may sometimes cure the whole affection; and they may be useful even when the disease depends upon a fault of the whole system.

Both in the *ophthalmia membranarum*, and in the *ophthalmia tarfi*, it is necessary to obviate that glueing together of the eye-lids which commonly happens in sleep; and which may be done by insinuating a little of any mild unctuous medicine between the eye-lids before the patient shall go to sleep.

The slighter kinds of inflammations from the dust or the sun, may be removed by fomenting with warm milk and water, adding a small portion of brandy; and by anointing the borders of the eye-lids with *unguentum tutia*, or the like, at night, especially when those parts are excoriated and sore. But in bad cases, after the inflammation has yielded a little to evacuations, the *cataplasma aluminis* of the London pharmacopœia spread on lint, and applied at bed-time, has been found the best external remedy. Before the use of the latter, the solution of white vitriol is prescribed with advantage; and in violent pains it is of service to foment frequently with a decoction of white poppy-heads. One of the most common and most disagreeable consequences of ophthalmia, is an opuscation of the cornea, so far obstructing the passage of light as to diminish or prevent vision. This is sometimes so considerable as to admit of removal by operation: but in slighter cases it may often be removed by the application of different gentle escharotics; and in this way, without the least danger of any inconvenience, good effects are often obtained, from gently introdu-

No 204.

cing into the eye at bed-time a powder consisting of equal parts of crystals of tartar and sugar.

Where there is a disposition to frequent returns of this affection, the Peruvian bark is often employed with success in combating it: But nothing in general answers better than frequent and regular cold bathing of the eyes.

GENUS IX. PHRENITIS.

PHRENZY, or Inflammation of the BRAIN.

176

Phrenitis, *Sauv.* gen. 101. *Lin.* 25. *Sag.* gen. 301.*Boerb.* 771. *Hoffm.* II. 131. *Junck.* 63.Phrenismus, *Vog.* 45.Cephalitis, *Sauv.* gen. 109. *Sag.* gen. 310.Sphacelismus, *Lin.* 32.Phrenitis vera, *Sauv.* sp. 1. *Boerb.* 771.Phrenitis idiopathica, *Junck.* 63.Cephalalgia inflammatoria, *Sauv.* sp. 9.Cephalitis spontanea, *Sauv.* sp. 3.Cephalitis siriasis, *Sauv.* sp. 4.Siriasis, *Vog.* 34.Cephalitis Littriana, *Sauv.* sp. 5.

Dr Cullen observes, that the true phrenitis, or inflammation of the membranes or substance of the brain, is very rare as an original disease: but, as a symptom of others, much more frequent; of which the following kinds are enumerated by different authors.

Phrenitis synochi pleuritica, *Sauv.* sp. 2.Phrenitis synochi sanguinea, *Sauv.* sp. 4.Phrenitis calentura, *Sauv.* sp. 11.Phrenitis Indica, *Sauv.* sp. 12.Cephalitis Ægyptiaca, *Sauv.* sp. 1.Cephalitis epidemica anno 1510, *Sauv.* sp. 6.Cephalitis verminosa, *Sauv.* sp. 7.Cephalitis cerebelli, *Sauv.* sp. 8.Phrenitis miliaris, *Sauv.* sp. 3.Phrenitis variolosa, *Sauv.* sp. 5.Phrenitis morbillosa, *Sauv.* sp. 6.Phrenitis a plica, *Sauv.* sp. 8.Phrenitis aphrodisiaca, *Sauv.* sp. 9.Phrenitis a tarantismo, *Sauv.* sp. 14.Phrenitis hydrophobica, *Sauv.* sp. 15.Phrenitis a dolore, *Sauv.* sp. 13.Cephalitis traumatica, *Sauv.* sp. 2.

Description. The signs of an impending phrenitis are, immoderate and continual watchings; or if any sleep be obtained, it is disturbed with dreams and gives no refreshment; acute and lasting pains, especially in the hind part of the head and neck; little thirst; a great and slow respiration, as if proceeding from the bottom of the breast; the pulse sometimes small and slow, sometimes quick and frequent; a suppression of urine; and forgetfulness. The distemper when present may be known by the following signs: The veins of the head swell, and the temporal arteries throb much; the eyes are fixed, sparkle, and have a fierce aspect; the speech is incoherent, and the patient behaves very roughly to the by-standers, with furious attempts to get out of bed, not indeed continually, but returning as it were by paroxysms; the tongue is dry, rough, yellow, or black; there is a coldness of the external parts; a proneness to anger; chattering of the teeth; a trembling of the hands, with

Phlegma-
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with which the sick seem to be gathering something, and actually do gather the naps off the bed-clothes.

Causes of, and persons subject to, this disorder. People of a hot and bilious habit of body, and such as are of a passionate disposition, are apt to be affected with phrenitis. In the same danger are those who use much spices, or are given to hot and spirituous liquors; who have been exposed more than usual to the sun, or obliged to undergo immoderate studies or watchings; who are subject to head-achs, or in whom some customary hemorrhages have been stopped; or the disease may arise from some injury offered to the head externally. Dr Pringle observes, that the phrenitis, when considered as an original disease, is apt to attack soldiers in the summer-season when they are exposed to the heat of the sun, and especially when asleep and in liquor. A symptomatic phrenitis is also more frequent in the army than elsewhere, on account of the violence done to all fevers when the sick are carried in waggons from the camp to an hospital, where the very noise or light alone would be sufficient, with more delicate natures, to raise a phrenzy. From these and similar causes, a state of active inflammation, affecting some parts within the cranium, is produced: and there can be no doubt, that from this all the symptoms of the disease arise, and particularly that peculiar delirium which characterises it. But in what manner local diseases, even of the brain itself, produce affections of the mind, we are still totally in the dark.

Prognosis. Every kind of phrenitis, whether idiopathic or symptomatic, is attended with a high degree of danger; and, unless removed before the fourth day, a gangrene or sphacelus of the meninges readily takes place, and the patient dies delirious. The following are the most fatal symptoms: A continual and furious delirium, with watching; thin watery urine, white feces, the urine and stools running off involuntarily, or a total suppression of these excretions; a ready disposition to become stupid, or to faint; trembling, rigor, chattering of the teeth, convulsions, hiccough, coldness of the extremities, trembling of the tongue, shrill voice, a sudden cessation of pain, with apparent tranquillity. The following are favourable: Sweats, apparently critical, breaking out; a seeming effort of nature to terminate the disease by a diarrhoea; a large hemorrhagy from the nose; swellings of the glands behind the ears; hæmorrhoids.

Cure. From what has been said of the theory of this disease, the cure must entirely depend on obtaining a resolution of the inflammation. The objects chiefly to be aimed at with this view are, 1. The removal of such exciting causes as continue to operate. 2. The diminution of the momentum of the blood in the circulating system in general. 3. The diminution of impetus at the brain in particular: and, 4. The avoiding circumstances which tend either to accelerate the motion of the blood or to give determination to the head.

Different practices may be used with these intentions; but here the most powerful remedies are to be immediately employed. Large and repeated bleedings are especially necessary; and these too taken from vessels as near as possible to the part affected. The opening the temporal artery has been recommended, and with some reason: but as the practice is attended

Vol. XI. Part I.

with some inconveniences, perhaps the opening of the jugular veins may prove more effectual; with which, however, may be joined the drawing of blood from the temples by cupping and scarifying. It is also probable, that purging may be of more use in this than in some other inflammatory affections, as it may operate by revulsion. For the same purpose of revulsion, warm pediluvia are a remedy, but rather ambiguous. The taking off the force of the blood in the vessels of the head by an erect posture is generally useful. Blistering is also useful, but chiefly when applied near to the part affected. In short, every part of the antiphlogistic regimen is here necessary, and particularly the admission of cold air. Even cold substances applied to the head have been found useful; and the application of such refrigerants as vinegar is certainly proper. Opiates are thought to be hurtful in every inflammatory state of the brain. On the whole, however, it must be remarked, that practitioners are very uncertain with regard to the means proper to be used in this disease; and the more so, that the symptoms by which the disease is commonly judged to be present, appear sometimes without any internal inflammation; and on the other hand, dissections have shown that the brain has been inflamed, where few of the peculiar symptoms of inflammation had appeared before.

GENUS X. CYNANCHE.

Cynanche, *Sauv.* gen. 110. *Lin.* 33. *Sag.* gen. 300.

Angina, *Vog.* 49. *Hoffm.* II. 125. *Junck.* 30.

Angina inflammatoria, *Boerb.* 798.

Sp. I. CYNANCHE TONSILLARIS.

The Inflammatory QUINSY.

Cynanche tonsillaris, *Sauv.* sp. 1.

Anginæ inflammatoria, sp. 5. *Boerb.* 805.

Description. This is an inflammation of the mucous membrane of the fauces, affecting principally that congeries of mucous follicles which forms the tonsils; and from thence spreading along the velum and uvula, so as frequently to affect every part of the mucous membrane. The disease appears by some tumor and redness of the parts; is attended with a painful and difficult deglutition; a troublesome clamminess of the mouth and throat; a frequent but difficult excretion of mucus; and the whole is accompanied with pyrexia. The inflammation and tumor are commonly at first most considerable in one tonsil; and afterwards, abating in that, increase in the other. This disease is not contagious.

Causes of, and persons subject to, this disorder. This disease is commonly occasioned by cold externally applied, particularly about the neck. It affects especially the young and sanguine; and a disposition to it is often acquired by habit. It occurs especially in the spring and autumn, when vicissitudes of heat and cold frequently take place.

Prognosis. This species of quinsy terminates frequently by resolution, sometimes by suppuration, but hardly ever by gangrene; though in some cases sloughy spots appear on the fauces: the prognosis therefore is generally favourable.

Cure. As the principal morbid affection in this disease, on which all its characterising symptoms immediately

X

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Phrenitis

177

178

Phlegma
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mediately depend, is the active inflammation in the tonsils and neighbouring parts, the object first and principally to be aimed at in the cure is to obtain a resolution of this inflammation. Sometimes, however, it is necessary to have recourse to practices, with the view of obviating urgent symptoms before a resolution can be effected: and in other cases, where a resolution cannot be obtained, it must be the aim of the practitioner to promote a speedy and favourable suppuration. After suppuration has taken place, the proper means of promoting a discharge of the purulent matter will conclude the cure. Here some bleeding may be necessary; but large and general evacuations are seldom beneficial. The opening of the ranular veins seems to be an insignificant remedy, according to Dr Cullen, but is recommended as efficacious by Sir John Pringle: more benefit, however, may in general be derived from leeches to the external fauces. The inflammation may be often relieved by moderate astringents, and particularly by acids applied to the parts affected. In many cases, nothing has been found to give more relief than the vapour of warm water received into the fauces.

Besides these, blistering, and still more frequently rubefacient medicines, are applied with success, as well as antiphlogistic purgatives; and every part of the antiphlogistic regimen is to be observed, except the application of cold. Sir John Pringle recommends a thick piece of flannel moistened with two parts of common sweet oil, and one of spirit of hartshorn (or in a larger proportion, if the skin will bear it), to be applied to the throat, and renewed once every four or five hours. By this means the neck, and sometimes the whole body, is put into a sweat, which after bleeding either carries off or lessens the inflammation. When the disease takes a tendency to suppuration, nothing will be more useful than the taking into the fauces the steams of warm water. Benefit is also obtained from poultices applied to the external fauces. When the abscess is attended with much swelling, if it break not spontaneously, it ought to be opened by a lancet; and this does not require much caution, as even the inflammatory state may be relieved by some scarification of the tonsils. When this disease runs very rapidly to such a height as to threaten suffocation, it is sometimes necessary to have recourse to bronchotomy as the only mean of saving the life of the patient. But there is reason to believe that this operation has sometimes been employed where it was not necessary: and we may safely venture to say, that it is but seldom requisite; inasmuch that Dr Cullen tells us, he has never in his practice seen any case requiring bronchotomy.

Sp. II. CYNANCHE MALIGNA.

The malignant, putrid, or ulcerous SORE THROAT.

Cynanche maligna, *Sauv.* sp. 3.Cynanche ulcerosa, *Sauv.* var. a. Journ. de Med. 1758.Cynanche gangrænoſa, *Sauv.* var. b. Journ. de Med. 1756.Ulcers faucium et gutturis anginoſa et lethalia, Hispanis Garrotillo, *Lud. Mercat.* consult. 24.Angina ulcerosa, *Fothergill's* Account of the ulcerous sore throat, edit. 1751. *Huxham* on the malignant ulcerous sore throat, from 1751 to 1753.Febris epidemica cum angina ulcusculosa, *Douglas's* Cynanche.

Practical History, Boston 1736.

Angina epidemica, *Ruffel*, Oecon. Natur. p. 105.Angina gangrænoſa, *Withering's* Dissert. Inaug. E. dinb. 1766.Angina suffocativa, *Bard's* Inquiry, New-York, 1771.Angina maligna, *Johnstone* on the malignant Angina, Worcester, 1779.

History and description. This distemper is not particularly described by the ancient physicians; though perhaps the Syrian and Egyptian ulcers mentioned by Aretæus Cappadox, and the pestilent ulcerated tonsils we read of in Actius Amideus, were of this nature. Some of the scarlet fevers mentioned by Morton seem also to have approached near to it. In the beginning of the last century, a disease exactly similar to this is described by the physicians of that time, as raging with great violence and mortality in Spain and some parts of Italy; but no account of it was published in this country till the year 1748, when a very accurate one was drawn up by Dr Fothergill, and in 1752 by Dr Huxham. The latter observes, that this disease was preceded by long, cold, and wet seasons; by which probably the bodies of people were debilitated, and more apt to receive contagion, which possibly also might be produced by the stagnant and putrid waters.

The attack of this disease was very different in different persons. Sometimes a rigor, with fulness and soreness of the throat, and painful stiffness of the neck, were the first symptoms complained of. Sometimes alternate chills and heats, with some degree of giddiness, drowsiness, or head-ach, ushered in the distemper. It seized others with much more feverish symptoms; great pain of the head, back, and limbs; a vast oppression of the præcordia, and continual sighing. Some grown persons went about for some days in a drooping state, with much uneasiness and anxiety, till at last they were obliged to take to their beds.—Thus various was the disease, says Dr Huxham, at the onset. But it commonly began with chills and heats, load and pain of the head, soreness of throat, and hoarseness; some cough, sickness at stomach, frequent vomiting and purging, in children especially, which were sometimes very severe; though a contrary state was more common to the adult. There was in all a very great depression of spirits, very sudden weakness, great heaviness on the breast, and faintness, from the very beginning. The pulse in general was quick, small, and fluttering, though sometimes heavy and undulating. The urine was commonly pale, thin, and crude; however, in many grown persons, it was passed in small quantities and high-coloured, or like turbid whey. The eyes were heavy, reddish, and as it were weeping; the countenance very often full, flushed, and bloated, though sometimes pale, and sunk.

How slight soever the disorder might appear in the day-time, at night the symptoms became greatly aggravated, and the feverish habit very much increased, nay, sometimes a delirium occurred on the very first night; and this exacerbation constantly returned thro' the whole course of the disease. Indeed, when it was considerably on the decline, our author says he has been often pretty much surprised to find his patient

Phlegma- had passed the whole night in a phrenzy, whom he had
sia left tolerably cool and sedate in the day.

Some few hours after the seizure, and sometimes cotemporary with it, a swelling and foreness of the throat was perceived, and the tonsils became very tumid and inflamed, and many times the parotid and maxillary glands swelled very much, and very suddenly, even at the very beginning; sometimes so much as even to threaten strangulation. The fauces also very soon appeared of a high florid red, or rather of a bright crimson, colour, very shining and glossy; and most commonly on the uvula, tonsils, velum palatinum, and back part of the pharynx, several whitish or ash-coloured spots appeared scattered up and down, which oftentimes increased very fast, and soon covered one or both the tonsils, uvula, &c. those in the event proved sloughs of superficial ulcers (which sometimes, however, eat very deep into the parts). The tongue at this time, though only white and moist at the top, was very foul at the root, and covered with a thick yellowish or brown coat. The breath also now began to be very nauseous; which offensive smell increased hourly, and in some became at length intolerable, and that too sometimes even to the patients themselves.

The second or third day every symptom became much more aggravated, and the fever much more considerable; and those that had struggled with it tolerably well for 30 or 40 hours, were forced to submit. The restlessness and anxiety greatly increased, as well as the difficulty in swallowing. The head was very giddy, pained, and loaded; there was generally more or less of a delirium; sometimes a pervigilium and perpetual phrenzy, though others lay very stupid, but often starting and muttering to themselves. The skin was very hot, dry, and rough; there was very rarely any disposition to sweat. The urine was pale, thin, crude; often yellowish and turbid. Sometimes a vomiting was urgent, and sometimes a very great looseness, in children particularly. The sloughs were now much enlarged, and of a darker colour, and the surrounding parts tended much more to a livid hue. The breathing became much more difficult; with a kind of a rattling stertor, as if the patient was actually strangling, the voice being exceeding hoarse and hollow, exactly resembling that from venereal ulcers in the fauces: this noise in speaking and breathing was so peculiar, that any person in the least conversant with the disease might easily know it by this odd noise; from whence indeed the Spanish physicians gave it the name of *garotillo*, expressing the noise made by persons when they are strangled with a rope. Our author never observed in one of them the shrill barking noise that we frequently hear in inflammatory quinseys. The breath of all the diseased was very nauseous; of some insufferably fetid, especially in the advance of the distemper to a crisis; and many about the fourth or fifth day spit off a vast quantity of stinking purulent mucus tinged sometimes with blood; and sometimes the matter was quite livid, and of an abominable smell. The nostrils likewise in many were greatly inflamed and excoriated, continually dripping down a most sharp ichor or sanious matter, so excessively acrid, that it not only corroded the lips, cheeks, and hands of the children that laboured under the disease, but even the fingers

and arms of the very nurses that attended them: as this ulceration of the nostrils came on, it commonly caused an almost incessant sneezing in the children; but few adults were affected with it, at least to any considerable degree. It was surprising what quantities of matter some children discharged this way, which they would often rub on their face, hands, and arms, and blister them all over. A sudden stoppage of this rheum from the mouth and nostrils actually choked several children; and some swallowed such quantities of it, as occasioned excoriations of the intestines, violent gripings, dysentery, &c. nay, even excoriations of the anus and buttocks. Not only the nostrils, fauces, &c. were greatly affected by this extremely sharp matter, but the wind-pipe itself was sometimes much corroded by it, and pieces of its internal membrane were spit up, with much blood and corruption; and the patients lingered on for a considerable time, and at length died tabid; though there were more frequent instances of its falling suddenly and violently on the lungs, and killing in a peripneumonic manner.

Dr Huxham was astonished sometimes to see several swallow with tolerable ease, though the tumor of the tonsils and throat, the quantity of thick mucus, and the rattling noise in breathing, were very terrible; which he thinks pretty clearly shows, that this malignant quinsy was more from the acrimony and abundance of the humours than the violence of the inflammation.

Most commonly the angina came on before the exanthemata; but many times the cuticular eruption appeared before the fore-throat, and was sometimes very considerable, though there was little or no pain in the fauces: on the contrary, a very severe angina seized some patients that had no manner of eruption; and yet, even in these cases, a very great itching and desquamation of the skin sometimes ensued; but this was chiefly in grown persons, very rarely in children. In general, however, a very considerable efflorescence broke out on the surface of the body, particularly in children; and it most commonly happened the second, third, or fourth day: sometimes it was partial, sometimes it covered almost the whole body, though very seldom the face: sometimes it was of an erysipelatous kind; sometimes more pustular: the pustules frequently eminent, and of a deep fiery red colour, particularly on the breast and arms; but oftentimes they were very small, and might be better felt than seen, and gave a very odd kind of roughness to the skin. The colour of the efflorescence was commonly of a crimson hue, or as if the skin had been smeared over with juice of raspberries, and this even to the fingers ends; and the skin appeared inflamed and swollen, as it were; the arms, hands, and fingers, were often evidently so, and very stiff, and somewhat painful. This crimson colour of the skin seemed indeed peculiar to this disease. Though the eruption seldom failed of giving some manifest relief to the patient, as to anxiety, sickness at stomach, vomiting, purging, &c. yet there was observed an universal fiery eruption on some persons, without the least abatement of the symptoms, nay almost every symptom seemed more aggravated, particularly the fever, load at breast, anxiety, delirium; and our author knew more than one or two patients die in the most raging phrenzy, covered with the most universal fiery rash he ever saw: so that, as in

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the highly confluent small-pox, it seemed only to denote the quantity of the disease, as he terms it.

He had under his care a young gentleman, about 12 years of age, whose tongue, fauces, and tonsils, were as black as ink, and he swallowed with extreme difficulty; he continually spit off immense quantities of a black, sanious, and very fetid matter, for at least eight or ten days:—about the seventh day, his fever being somewhat abated, he fell into a bloody dysentery, though the bloody, sanious, fetid expectoration still continued, with a most violent cough. He at length indeed got over it, to the very great surprise of every one that saw him. Now, in this patient, a severe and universal rash broke out upon the second and third day; and the itching of his skin was so intolerable, that he tore it all over his body in a most shocking manner: yet this very great and timely eruption very little relieved his fever and phrenzy, or prevented the other dreadful symptoms mentioned,

An early and kindly eruption, however, was most commonly a very good omen; and, when succeeded by a very copious desquamation of the cuticle, one of the most favourable symptoms that occurred; but when the eruption turned of a dusky or livid colour, or prematurely or suddenly receded, every symptom grew worse, and the utmost danger impended, especially if purple or black spots appeared up and down, as sometimes happened; the urine grew limpid, and convulsions came on, or a fatal suffocation soon closed the tragedy.

The disease was generally at the height about the fifth or sixth day in young persons, in the elder not so soon; and the crisis many times was not till the 11th or 12th, and then very imperfect: some adults, however, were carried off in two or three days; the distemper either falling on the lungs, and killing in a peripneumonic manner; or on the brain, and the patient either died raving or comatose. In some, the disease brought on a very troublesome cough, purulent expectoration, hæmoptoe, and hectic; in which they lingered on for several weeks, and then died tabid.

If a gentle easy sweat came on the third or fourth day; if the pulse became more slow, firm, and equal; if the sloughs of the fauces cast off in a kindly manner, and appeared at the bottom tolerably clean and florid; if the breathing was more soft and free, and some degree of vigour and quickness returned in the eyes; all was well, and a salutary crisis followed soon by a continuance of the sweat, and a turbid, subsiding, farinaceous urine, a plentiful expectoration, and a very large desquamation of the cuticle. But if a rigor came on, and the exanthemata suddenly disappeared or turned livid; if the pulse grew very small and quick, and the skin remained hot and parched as it were, the breathing more difficult, the eyes dead and glassy, the urine pale and limpid, a phrenzy or coma succeeded, with a coldish clammy sweat on the face or extremities; life was despaired of; especially if a singultus and choaking or gulping in the throat attended, with sudden, liquid, involuntary, livid stools, intolerably fetid. In some few patients Dr Huxham observed, some time before the fatal period, not only the face bloated, fallow, shining, and greasy as it were, but the whole neck very

much swoln, and of a cadaverous look; and even the whole body became in some degree œdematous; and the impression of a finger would remain fixed in a part, the skin not rising again as usual; an indication that the blood stagnated in the capillaries, and that the elasticity of the fibres was quite lost.

Medical writers are still much divided in opinion, whether the cynanche maligna is to be considered as the same disease with the scarlatina anginosa, afterwards to be treated of, or not. This question will afterwards come to be more fully discussed. At present we may only observe, that although ulcerous sore throats of a malignant nature often appear sporadically, yet that the disease above described appears only as an epidemic, and is always the consequence of contagion.

Prognosis. This may be easily gathered from the above description. The malignant and putrid tendency of the disease is evident, and an increase of the symptoms which arise from that putrescent disposition of the body must give an unfavourable prognostic; as, on the contrary, a decrease of these, and an apparent increase of the *vis vite*, are favourable: in general, what is observed to be favourable in the nervous and putrid malignant fevers, is also favourable in this, and *vice versa*.

Causes. Since the accurate accounts given by Dr Fothergill and Huxham of the epidemics which prevailed about 50 years ago, this disease has frequently been observed at times epidemic in almost every different part of Britain. Like small-pox, measles, and chin-cough, it seems in every case to be the effect of a peculiar and specific contagion. It has been observed to prevail, equally generally in every situation, and at every season; and on exposure to the contagion, no age, sex, or condition, is exempted from it. But the having once had the disease, seems in this affection to afford the same security against future contagion as in the small-pox: at least instances, where it can be said that the same individual has been twice affected with it, are both very rare and very doubtful, as well as in small-pox.

Cure. Like other febrile contagions, the malignant ulcerous sore-throat is terminated only by a natural course; and the chief business of the practitioner is to combat unfavourable occurrences. In this the septic tendency of the disease is chiefly to be kept in view. The debility with which it is attended renders all evacuations by bleeding and purging improper, except in a few instances where the debility is less, and the inflammatory symptoms more considerable. The fauces are to be preserved from the effects of the acrid matter poured out upon them, and are therefore to be frequently washed out by antiseptic gargles or injections; and the putrescent state of the whole system should be guarded against and corrected by internal antiseptics, especially by the Peruvian bark given in the beginning and continued through the course of the disease. Great benefit is also often derived from the liberal use of the mineral acids. Both the vitriolic and muriatic, in a state of proper dilution, have been highly extolled by different medical writers, and are productive of the best effects in actual practice, when they can be introduced to a sufficient extent. Emetics, both by vomiting and nauseating, prove useful. When any considerable tumor occurs, blisters applied

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lia externally will be of service, and in any case may be proper to moderate the inflammation.

Very lately, the internal use of the capicum annuum, or Cayenne pepper as it is commonly called, has been highly celebrated in this affection; and it is particularly said to have been employed with singular success in the West Indies.

180

Sp. III. CYNANCHE TRACHEALIS.
The CROUP

Cynanche trachealis, *Sauv.* sp. 5.

Cynanche laryngea auctorum, *Eller de cogn. et curand. morb. sect. 7.*

Anginae inflammatoria, sp. 1. *Boerb.* 801.

Angina latens et difficilis, *Dodon.* obs. 18.

Angina interna, *Tulp.* l. 1. obs. 51.

Angina perniciofa, *Greg. Horst.* Obs. l. iii. obs. 1.

Suffocatio stridula, *Home* on the Croup.

Asthma infantum, *Millar* on the Asthma and Cough.

Asthma infantum spasmodicum, *Rush,* Dissertation, Lond. 1770.

Cynanche stridula, *Crawford* Dissert. Inaug. Edin. 1771.

Angina epidemica anno 1743. *Molloy* apud *Rutty's* History of the weather.

Morbus strangulatorius, *Starr,* Phil. Trans. n° 495.

Morbus truculentus infantum, *Francos.* ad Viadrum

et in vicinia grassans ann. 1758. C. a Bergen.

A nova. N. C. tom. ii. p. 157.

Catarrhus suffocativus Barbadosis ann. 1758. *Hilary's* Diseases of Barbadoes.

Angina inflammatoria infantum, *Ruffel,* Oecon. nat. p. 70.

Angina polyposa five membranacea *Michealis.* Argentorati 1778, et auctores ab eo allegati.

The best description of this disease we have in Dr Cullen's Practice of Physic. He informs us, that it consists in an inflammation of the glottis, larynx, or upper part of the trachea, whether it affect the membranes of these parts or the muscles adjoining. It may arise first in these parts, and continue to subsist in them alone; or it may come to affect these parts from the cynanche tonsillaris, or maligna, spreading into them.

In either way it has been a rare occurrence, and few instances of it have been marked and recorded by physicians. It is to be known by a peculiar croaking sound of the voice, by difficult respiration, with a sense of straitening about the larynx, and by a pyrexia attending it.

From the nature of these symptoms, and from the dissection of the bodies of persons who died of this disease, there is no doubt of its being of an inflammatory kind. It does not, however, always run the course of inflammatory affections; but frequently produces such an obstruction of the passage of the air, as suffocates, and thereby proves suddenly fatal.

It particularly proves fatal, in consequence of the trachea being obstructed by a membranous substance lining the inside of it, and very nearly approaching in appearance to the inflammatory exudation often discovered on the intestinal canal in those dying of enteritis.

If we judge rightly of the nature of this disease, Cynanche, it will be obvious, that the cure of it requires the most powerful remedies of inflammation to be employed upon the very first appearance of the symptoms. When a suffocation is threatened, whether any remedies can be employed to prevent it, is not yet determined by sufficient experience: but it is evident, that in certain cases the life of the patient can be preserved only by the removal of that matter which obstructs the passage of air through the trachea.

The accounts which books have hitherto given us of inflammations of the larynx, and the parts connected with it, amount to what we have now said; and many instances are recorded of the disease happening in adult persons: but there is a peculiar affection of this kind happening to infants, which has been little taken notice of till lately. Dr Home is the first who has given any distinct account of this disease; but, since he wrote, several other authors have taken notice of it, and have given different opinions concerning it.

This disease seldom attacks infants till after they have been weaned. After this period, the younger they are, the more they are liable to the disease. The frequency of it becomes less as children become more advanced; and there are few instances of children above 12 years of age being affected with it. It attacks children of the midland countries, as well as those who live near the sea; but it occurs much more frequently at certain places than at others. It does not appear to be contagious; and its attacks are frequently repeated in the same child. It is often manifestly the effect of cold applied to the body; and therefore appears most frequently in the winter and spring seasons. It very commonly comes on with the ordinary symptoms of a catarrh; but sometimes the peculiar symptoms of the disease show themselves at the very first.

These peculiar symptoms are the following: A hoarseness, with some shrillness and ringing sound, both in speaking and coughing, as if the noise came from a brazen tube. At the same time, there is a sense of pain about the larynx, some difficulty of respiration, with a whizzing sound in inspiration, as if the passage of the air were straitened. The cough which attends it, is commonly dry; and if any thing be spit up, it is a matter of a purulent appearance, and sometimes films resembling portions of a membrane. With all these symptoms, there is a frequency of pulse, a restlessness, and an uneasy sense of heat. When the internal fauces are viewed, they are sometimes without any appearance of inflammation; but frequently a redness, and even swelling, appears; and sometimes there is an appearance of matter like to that rejected by coughing, together with the symptoms now described, and particularly with great difficulty of breathing, and a sense of strangling in the fauces, by which the patient is sometimes suddenly taken off.

Many dissections have been made of infants who had died of this disease, and almost constantly there has appeared a preternatural substance, apparently membranous, lining the whole internal surface of the upper part of the trachea, and extending in the same

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manner downwards into some of its ramifications. This preternatural membrane may be easily separated, and sometimes has been found separated in part, from the subjacent proper membrane of the trachea. This last is commonly found entire, that is, without any appearance of erosion or ulceration; but it frequently shows the vestiges of inflammation, and is covered by a matter resembling pus, like to that rejected by coughing; and very often a matter of the same kind is found in the bronchiæ, sometimes in considerable quantity.

From the remote causes of this disease; from the catarrhal symptoms commonly attending it; from the pyrexia constantly present with it; from the same kind of preternatural membrane being found in the trachea when the cynanche maligna is communicated to it; and from the vestiges of inflammation on the trachea discovered upon dissection; we must conclude, that this disease consists in an inflammatory affection of the mucous membrane of the larynx and trachea, producing an exudation analogous to that found on the surface of inflamed viscera, and appearing partly in a membranous crust, and partly in a fluid form resembling pus.

Though this disease consists in an inflammatory affection, it does not commonly end either in suppuration or gangrene. The troublesome circumstance of it seems to consist in a spasm of the muscles of the glottis, threatening suffocation.

When this disease terminates in health, it is by resolution of the inflammation, by ceasing of the spasm of the glottis, by an expectoration of the matter exuding from the trachea, and of the crusts formed there, and frequently it ends without any expectoration, or at least with such only as attends an ordinary catarrh. But in some instances, a salutary termination has very speedily taken place, in consequence of the discharge of the membranous substance from the trachea, even under its proper tubular form.

When the disease ends fatally, it is by a suffocation seemingly depending upon a spasm affecting the glottis; but sometimes, probably, depending upon a quantity of matter filling the bronchiæ, or obstructing the trachea.

As we suppose the disease to be an inflammatory affection, so we attempt the cure of it by the usual remedies of inflammation. Bleeding, both general and topical, has often given immediate relief, and, by being repeated, has entirely cured the disease. Blistering also, near to the part affected, has been found useful. Upon the first attack of the disease, vomiting, immediately after bleeding, seems to be of considerable use, and sometimes suddenly removes the disease. But emetics are still more useful in advanced periods. By the employment of these, the matter obstructing the trachea, and inducing spasmodic affections, has often been successfully removed, when the situation of the patient seemed to be almost desperate. And as in the progress of the disease fresh effusions of this matter are very apt to take place, the frequent repetition of emetics becomes necessary. It is often necessary to have recourse to those operating the most expeditiously, such as vitriolated zinc even in large doses. In every stage of the disease, the antiphlogis-

tic regimen is necessary, and particularly the frequent use of laxative glysters. Though we suppose that a spasm affecting the glottis is often fatal in this disease, antispasmodic medicines have not in general been found of great service. Some, however, have strongly recommended the use of asafoetida under the form of injection; others place great confidence in oil, or oily mixtures, taken by the mouth; but more immediate benefit is derived from tepid bathing, and the employment of vitriolic ether, both externally and internally.

Sp. IV. CYNANCHE PHARYNGEA.

181

Cynanche pharyngea, *Sauv.* sp. 6. *Eller de cogn.* et cur. sect. 7.

Anginæ inflammatoriæ, sp. 4. *Boerb.* 804.

This is not materially different from the cynanche tonsillaris; only that the inflammation is said to begin in the pharynx, though Dr Cullen says he never knew an instance of it. The symptoms are almost the same, and the cure is precisely so with that of the cynanche tonsillaris.

Sp. V. CYNANCHE PAROTIDÆA.

181

Cynanche parotidæa, *Sauv.* sp. 14. *Gallis Oreillons et OURLES, Tiffot Avis au peuple, n° 116. Encyclopedie, au mot Oreillons.*

Angina externa, *Anglis* the MUMPS, *Ruffel æcon. natur.* p. 114. *Scotis* the BRANKS.

Catarrhus Bellinfulanus, *Sauv.* sp. 4.

Offervazioni di *Girol. Gaspari*, Venez. 1731.

Offervazioni di *Targ. Tozzetti*, Racolta Ima, p. 176.

This is a disease well known to the vulgar, but little taken notice of by medical writers. It is often epidemic, and manifestly contagious. It comes on with the usual symptoms of pyrexia, which is soon after attended with a considerable tumor of the external fauces and neck. The swelling appears first as a glandular moveable tumor at the corner of the lower jaw; but it soon becomes uniformly diffused over a great part of the neck, sometimes on one side only, but more commonly on both. The swelling continues to increase till the fourth day; but from that period it declines, and in a few days more goes off entirely. As the swelling of the fauces recedes, it not unfrequently happens that some tumor affects the testicles in the male sex, or the breasts in the female. These tumors are sometimes large, hard, and somewhat painful; but are seldom either very painful or of long continuance. The pyrexia attending this disease is commonly slight, and goes off with the swelling of the fauces; but sometimes, when the swelling of the testicles does not succeed to that of the fauces, or when the one or the other has been suddenly repressed, the pyrexia becomes more considerable, is often attended with delirium, and has sometimes proved fatal.

As this disease commonly runs its course without either dangerous or troublesome symptoms, so it hardly requires any remedies. An antiphlogistic regimen, and avoiding cold, are all that will be commonly necessary. But when, upon the receding of the swellings, the pyrexia comes to be considerable, and threatens an affection of the brain, it will be proper, by warm fomentations,

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mentations, to bring back the swelling; and by vomit-
ing, bleeding, or blistering, to obviate the consequen-
ces of its absence.

183

GENUS XI. PNEUMONIA.

Febris pneumonica, Hoffm. II. 136.

184

Sp. I. PERIPNEUMONIA.

Peripneumony, or Inflammation of the LUNGS.

Peripneumonia, Sauv. gen. 112. Lin. 34. Vog.

51. Sag. gen. 311. Boerb. 820. Juncker 67.

Peripneumonia pura five vera Auctorum, Sauv.
sp. 1.Peripneumonia gastrica, Sauv. sp. 11. Morgagn.
de caus. et fed. Epist. xx. art. 30, 31.

Peripneumonia catarrhalis, Sauv. sp. 6.

Peripneumonia notha, Sydenh. sect. 6. cap. 4.
Boerb. 867. Morgagni de caus. et fed. Epist.
xxi. 11.—15.

Peripneumonia putrida, Sauv. sp. 2.

Peripneumonia ardens, Sauv. sp. 3.

Peripneumonia maligna, Sauv. sp. 4.

Peripneumonia typhodes, Sauv. sp. 5.

Amphimerina peripneumonica, Sauv. sp. 15.

185

Sp. II. PLEURITIS.

The Pleurisy, or Inflammation of the PLEURA.

Pleuritis, Sauv. gen. 103. Lin. 27. Vog. 56. Sag.
gen. 303. Boerb. 875. Junck. 67.

Paraphrenesis, Sauv. gen. 102. Lin. 26.

Paraphrenitis, Vog. 55. Boerb. 907.

Diaphragmitis, Sag. gen. 304.

Pleuritis vera, Sauv. sp. 1. Boerb. 875. Verna
princeps morb. acut. pleuritis, l. 1. cap. 2. 3.
Zeviani della parapleuritide, cap. 3. Morgagni
de fed. et caus. morb. Epist. xx. art. 56. xxi. 45.
Wendt de pleuritide, apud Sandifort, thes. ii.Pleuritis pulmonis, Sauv. sp. 2. Zevian. dell. para-
pleur. iii. 28, &c.Pleuropneumonia, pleuro-peripneumonia, peripneu-
mo-pleuritis Auctorum. Baronius de pleuri-pneu-
monia. Ill. Halleri opuscul. patholog. obs. 13.
Morgagni de fed. et caus. Epist. xx. and xxi. pas-
sim. Clegghorn, Minorca, p. 247. Triller de pleuri-
tide, aph. 1, 2, 3. cap. i. 8. Huxham, Dissert. on
pleuritis, &c. chap. i. Ill. Pringle, Dis. of the
army.Pleuritis convulsiva, Sauv. sp. 13. Bianch. Hist. hep.
vol. i. p. 234.Pleuritis hydrothoracica, Sauv. sp. 15. Morgagni de
caus. et fed. xx. 34.

Pleuritis dorsalis, Sauv. sp. 3. Verna, p. 3. cap. 8.

Pleuritis mediastini, Sauv. sp. 3. P. Sal. Div. de
affec. part. cap. 6. Friend, Hist. Med. de Aven-
zoare.

Mediastina, Vog. 52.

Pleuritis pericardii, Sauv. sp. 5. Verna, p. iii.
cap. 9.

Parapleuritis, Zeviani della parapleuritide.

Pleurodyne parapleuritis, Sauv. sp. 19.

Paraphrenesis diaphragmatica, Sauv. sp. 1. De Haen.
Rat. med. i. 7. iii. p. 31.

Paraphrenesis pleuritica, Sauv. sp. 2.

Paraphrenesis hepatica, Sauv. sp. 3.

Under the general head of *Pneumonia*, Dr Cullen comprehends all inflammations of the thoracic viscera, or membrane lining the inside of that cavity; as the symptoms do not sufficiently distinguish the seat of the affection, nor does a difference in the situation of the affected place make any difference in the cure.

Description. Pneumonic inflammation, however various in the seat, always discovers itself by pyrexia, difficult breathing, cough, and pain in some part of the thorax. It almost always comes on with a cold stage, and is accompanied with the other symptoms of pyrexia; though in some few instances the pulse may not be more frequent, nor the heat of the body increased beyond what is natural. Sometimes the pyrexia is from the beginning accompanied with the other symptoms; but frequently it is formed some hours before them, and particularly before the pain be felt. The pulse for the most part is frequent, full, strong, hard, and quick; but, in a few instances, especially in the advanced state of the disease, it is weak, soft, and at the same time irregular. The difficulty of breathing is most considerable in inspiration, both because the lungs do not easily admit of a full dilatation, and because the dilatation increases the pain attending the disease. The difficulty of breathing is also greater when the patient is in one posture of the body rather than another. It is generally greater when he lies on the side affected; though sometimes the contrary happens. Very often the patient cannot lie easy upon either side, and can find ease only when lying on the back; and sometimes he cannot breathe easily, except when in somewhat of an erect posture. The cough, in different cases, is more or less urgent or painful. It is sometimes dry, or without any expectoration, especially in the beginning of the disease; but more commonly it is, even from the beginning, moist, and the matter spit up various both in consistence and colour, and frequently it is streaked with blood. The pain is also different in different cases, and felt in different parts of the thorax, but most frequently in one side. It has been said to affect the right side more frequently than the left; but this is uncertain, and we are sure that the left side has been very often affected. Sometimes it is felt as if it was under the sternum; sometimes in the back between the shoulders; and when in the sides, its place has been higher or lower, more forward or backward; but the place of all most frequently affected is about the sixth or seventh rib, near the middle of its length, or a little more forward. The pain is often severe and pungent; but sometimes more dull and obtuse, with a sense of weight rather than of pain. It is most especially severe and pungent when occupying the place last mentioned. For the most part it continues fixed in one part, but sometimes shoots from the side to the scapula on one hand, or to the sternum and clavicle on the other.

Dr Cullen supposes that the disease is always seated, or at least begins, in some part of the pleura, taking that membrane in its greatest extent, as now commonly understood; that is, as covering not only the internal surface of the cavity of the thorax, but also as forming the mediastinum, and as extended over the pericardium, and over the whole surface of the lungs. But as the symptoms never clearly indicate where

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where the seat of the disease is, there is but little foundation for the different names by which it has been distinguished. The term *pleurisy* is improperly limited to that inflammation which begins in and chiefly affects the pleura costalis. This our author thinks is a rare occurrence; and that the *pneumonia* much more frequently begins in the pleura investing the lungs, producing all the symptoms which belong to what hath been called the *pleuritis vera*. The word *peripneumony* has been applied to an inflammation beginning in the parenchyma, or cellular texture of the lungs, and having its seat chiefly there. But to Dr Cullen it seems very doubtful if any acute inflammation of the lungs, or any disease which has been called *peripneumony*, be of that kind. It seems probable, that every acute inflammation begins in membranous parts; and in every dissection of persons who have died of peripneumony, the external membrane of the lungs, or some part of the pleura, has appeared to have been considerably affected. An inflammation of the pleura covering the upper surface of the diaphragm, has been distinguished by the appellation of *paraphrenitis*, as supposed to be attended with the peculiar symptoms of delirium, *risus sardonius*, and other convulsive motions: but it is certain, that an inflammation of that portion of the pleura, and affecting also even the muscular substance of the diaphragm, has often taken place without any of the symptoms above-mentioned; and neither the dissections which have fallen under Dr Cullen's observation, nor any accounts of dissections, support the opinion that an inflammation of the pleura covering the diaphragm is attended with delirium more commonly than any other pneumonic inflammation.— It is to be observed, however, that though the inflammation may begin in one particular part of the pleura, the morbid affection is commonly communicated to the whole extent of the membrane.

The pneumonic inflammation, like others, may terminate by resolution, suppuration, or gangrene: but it has also a termination peculiar to itself; namely, when it is attended with an effusion of blood into the cellular texture of the lungs, which, soon interrupting the circulation of the blood through the viscus, produces a fatal suffocation. This indeed appears to be the most common termination of pneumonic inflammation when it ends fatally; for upon the dissection of almost every person who has died of this disease, it appears that such an effusion had happened. From the same dissections we learn, that pneumonic inflammation commonly produces an exudation from the internal surface of the pleura, which appears partly as a soft viscid crust, often of a compact membranous form, covering every where the surface of the pleura, and particularly those parts where the lungs adhere to the pleura costalis, or mediastinum; and this crust seems always to be the cement of such adhesion. The same exudation shows itself also by a quantity of a serous fluid commonly found in the cavity of the thorax; and some exudation or effusion is usually found to have been made into the cavity of the pericardium. It seems likewise probable, that an effusion of this kind is sometimes made into the cavity of the bronchiæ; for in some persons who have died after labouring under a pneumonic inflammation for a few days only, the bronchiæ have been found filled with a consider-

N° 205.

able quantity of serous and thickish fluid, which must be considered rather as the effusion abovementioned, having had its thinner parts taken off by respiration, than as a pus so suddenly formed in the inflamed part. It is, however, not improbable, that this effusion, as well as that made into the cavities of the thorax and pericardium, may be a matter of the same kind with that which in other inflammations is poured into the cellular texture of the parts inflamed, and there converted into pus; but in the thorax and pericardium it does not always put on this appearance, because the crust covering the surface prevents the absorption of the thinner part. This absorption, however, may be compensated in the bronchiæ, by the drying power of the air; and therefore the effusion into them may assume a more purulent appearance. In many cases of pneumonic inflammation, when the expectoration is very copious, it is difficult to suppose that the whole proceeds from the mucous follicles of the bronchiæ; and it seems probable that a great part of it may come from the effused serous fluid just mentioned; and this too will account for the appearance of the expectoration being so often purulent. Perhaps the same thing will account for that purulent matter found in the bronchiæ, which Mr de Haen says he had often observed when there was no ulceration in the lungs, and which he accounts for in a very strange manner, namely, by supposing a pus formed in the circulating blood.

Dr Cullen is of opinion, that the effusion into the bronchiæ above-mentioned often concurs with the effusion of red blood into the cellular substance of the lungs to occasion the fatal suffocation which frequently terminates peripneumony: that the effusion of serum alone may have this effect: and that the serum poured out in a certain quantity, rather than any debility in the powers of expectoration, is the cause of that cessation of spitting which precedes the fatal event; for in many cases the expectoration has ceased, when no other symptoms of debility have appeared, and when, upon dissection, the bronchiæ have been full of liquid matter. Nay, it is even probable, that in some cases such an effusion may take place without any symptoms of violent inflammation; and in other cases the effusion taking place may seem to remove the symptoms of inflammation which had appeared before, and thus account for those unexpected fatal terminations which have sometimes happened.

Pneumonic inflammation seldom terminates by resolution, without being attended with some evident evacuation. An hæmorrhagy from the nose happening on some of the first days of the disease has sometimes put an end to it; and it is said, that an evacuation from the hæmorrhoidal veins, a bilious evacuation by stool, and an evacuation of urine with a copious sediment, have severally had the same effect; but such occurrences have been rare. The evacuation most frequently attending, and seeming to have the greatest effect in promoting resolution, is an expectoration of a thick, white, or yellowish matter, a little streaked with blood, copious, and brought up without much or violent coughing. Very frequently the resolution of this disease is attended with, and perhaps produced by, a sweat, which is warm, fluid, copious, over the whole body, and attended with an abatement of the frequency of the

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the pulse, heat of the body, and other febrile symptoms. Although, from the history now given, it appears that pleurisy and peripneumony cannot with propriety be considered as different diseases, yet it is certain that in different cases this affection occurs with an assemblage of symptoms separate and distinct. Thus even Dr Cullen himself, in his Nosology, has defined pleuritis to consist in pyrexia, attended with pungent pain of the side, painful respiration, difficulty of lying down, particularly on the affected side, and distressing cough, in the beginning dry, but afterwards humid, and often with bloody expectoration. While again he has defined peripneumony to consist in pyrexia, attended with a dull pain under the sternum and between the shoulders, anxiety, difficulty of breathing, humid cough, expectoration generally bloody, a soft pulse, and a tumid livid appearance of the countenance. It is highly probable, that the first of these sets of symptoms chiefly arises from a state of active inflammation, and the second from effusion. Thus, in certain cases, the symptoms may appear perfectly separate and distinct; but more frequently both inflammation and effusion are united; and thus the symptoms in both definitions are in general combined in the same patient.

Causes of, and persons subject to, this disorder. The remote cause of pneumonic inflammation is commonly cold applied to the body, obstructing perspiration, and determining to the lungs, while at the same time the lungs themselves are exposed to the action of cold. These circumstances operate chiefly when an inflammatory diathesis prevails in the system; and therefore those principally affected with this disease are persons of the greatest vigour, in cold climates, in the winter season, and particularly in the spring, when vicissitudes of heat and cold are frequent. This disease, however, may arise in any season when such varieties take place. Other remote causes also may have a share in producing this distemper; such as every means of obstructing, straining, or otherwise injuring, the pneumonic organs. The pneumonic inflammation has sometimes been so much an epidemic, that it hath been suspected of depending on a specific contagion; but Dr Cullen never met with an instance of its being contagious.

Prognosis. In pneumonic inflammations, a violent pyrexia is always dangerous. The danger, however, is chiefly denoted by the difficulty of breathing. When the patient can lie on one side only; when he can lie on neither side, but only on his back; when he cannot breathe with tolerable ease, except when the trunk of his body is erect; when even in this posture the breathing is very difficult, and attended with a turgescence and flushing of the face, with partial sweats about the head and neck, and an irregular pulse; these circumstances mark the difficulty of breathing in different degrees; and consequently, in proportion, the danger of the disease. A frequent violent cough, aggravating the pain, is always the symptom of an obstinate disease; and as the disease is seldom or never resolved without some expectoration, so a dry cough must always be an unfavourable symptom.

The proper characteristics of the expectoration have been already laid down; and though an expectoration which has not these marks must indicate a doubtful

state of the disease, yet the colour alone can give no certain prognostic. An acute pain, very much interrupting inspiration, is always the mark of a violent disease; but not of a more dangerous disease than an obtuse pain attended with very difficult respiration.

When the pains, which had at first affected one side only, shall afterwards spread into the other; or when, leaving the side first affected, they pass entirely into the other; these are always marks of a dangerous disease. A delirium coming on during a pneumonic inflammation is always a symptom denoting much danger.

When pneumonic disorders terminate fatally, it is on one or other of the days of the first week, from the third to the seventh. This is the most common case; but, in a few instances, death has happened at a later period. When the disease is violent, but admitting of resolution, this also happens frequently in the course of the first week; but in a more moderate disease the resolution is often put off to the second week. The disease generally suffers a remission on some of the days from the third to the seventh: which, however, may be often fallacious, as the disease sometimes returns again with as much violence as before; and in such a case with great danger. Sometimes it disappears on the third day, while an erysipelas makes its appearance on some external part; and if this continue fixed, the pneumonic inflammation does not recur. If the disease continue beyond the 14th day, it will terminate in a suppuration, or PHTHISIS. The termination by gangrene is much more rare than has been imagined: and when it does occur, it is usually joined with the termination by effusion; the symptoms of the one being hardly distinguishable from those of the other.

Cure. This must proceed upon the general plan mentioned under SYNOCHA; but, on account of the importance of the part affected, the remedies must be employed early, and as fully as possible: and these are chiefly directed with one of three views, viz. for obtaining a resolution of the inflammation in the thorax, for mitigating the urgent symptoms before a resolution can be effected, and for counteracting or obviating the consequences of the disease. Venesection is the remedy chiefly to be depended on; and may be done in either arm, as the surgeon finds most convenient; and the quantity taken away ought in general to be as large as the patient's strength will allow. The remission of pain, and the relief of respiration, during the flowing of the blood, may limit the quantity to be then drawn; but if these symptoms of relief do not appear, the bleeding should be continued to a considerable extent, unless symptoms of a beginning syncope come on. It is seldom that one bleeding, however large, will cure this disease; and though the pain and difficulty of breathing may be much relieved by the first bleeding, these symptoms commonly and after no long interval recur, often with as much violence as before. In this case the bleeding is to be repeated even on the same day, and perhaps to the same quantity as before. Sometimes the second bleeding may be larger than the first. There are persons who, by their constitution, are ready to faint even upon a small bleeding; and in such persons this may prevent the drawing so much blood at first as a pneumonic inflammation may require: but as the same persons are

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found to bear after-bleedings better than the first, this allows the second and subsequent bleedings to be larger, and to such a quantity as the symptoms of the disease may seem to require.

Bleedings are to be repeated according to the state of the symptoms, and they will be more effectual when practised in the course of the first three days than afterwards; but they are not to be omitted though four days of the disease may already have elapsed. If the physician has not been called in time, or the first bleedings have not been sufficiently large, or even though they should have procured some remission, yet upon the return of the urgent symptoms, bleeding may be repeated at any time within the first fortnight, or even after that period, if a suppuration be not evident, or if after a seeming solution the disease shall have returned.

With respect to the quantity of blood which may be taken away with safety, no general rules can be given; as it must be very different according to the state of the disease, and the constitution of the patient. In an adult male of tolerable strength, a pound avoirdupois of blood is a full bleeding. Any quantity above 20 ounces is a large, and any quantity below 12 is a small, bleeding. An evacuation of four or five pounds, in the course of two or three days, is generally as much as most patients will bear; but if the intervals between the bleedings, and the whole of the time during which the bleedings have been employed, have been long, the quantity taken upon the whole may be greater.

When a large quantity of blood hath been taken from the arm, and it is doubtful if more can be taken in that manner with safety, some blood may still be taken by cupping and scarifying. This will especially be proper, when the recurrence of the pain, rather than the difficulty of breathing, becomes the urgent symptom; and then the cupping and scarification should be made as near as possible to the pained part.

An expectoration sometimes takes place very early in this disease; but if the symptoms continue urgent, the bleedings must be repeated notwithstanding the expectoration: but in a more advanced state, and when the symptoms have suffered a considerable remission, we may then trust the cure to the expectoration alone. It is not observed that bleeding, during the first days of the disease, stops expectoration; on the contrary, it hath been often found to promote it; and it is only in a more advanced state of the disease, when the patient has been already exhausted by large evacuations and a continuance of his illness, that bleeding seems to put a stop to expectoration; and even then, this stoppage seems not to take place so much from the powers of expectoration being weakened by bleeding, as by its favouring the serous effusion in the bronchiæ, already taken notice of.

Besides bleeding, every part of the antiphlogistic regimen ought here to be carefully employed: the patient must keep out of bed as much as he can bear; must have plenty of warm diluting drinks, impregnated with vegetable acids, accompanied with nitre or some other cooling neutral salt; and the belly also ought to be kept open by emollient glysters or cooling laxative medicines. Vomiting in the beginning is dangerous; but in a somewhat advanced state of the disease emetics have been found the best means of promoting expectoration. Fomentations and poultices

to the pained part have been found useful; but blistering is found to be much more effectual. A blister, however, ought not to be applied till at least one bleeding hath been premised, as venesection is less effectual when the irritation of a blister is present. If the disease be moderate, a blister may be applied immediately after the first bleeding; but in violent cases, where it may be presumed that a second bleeding may soon be necessary after the first, it will be proper to delay the blister till after the second bleeding, when it may be supposed that the irritation occasioned by the blister will be over before another bleeding becomes necessary. It may frequently be of use in this disease to repeat the blistering; and in that case the plasters should always be applied somewhere on the thorax, for when applied to more distant parts they have little effect. The keeping the blistered parts open, and making what is called a *perpetual blister*, has much less effect than a repeated blistering.

Many methods have been proposed for promoting expectoration, but none appear to be sufficiently effectual; and some of them, being acrid stimulant substances, are not very safe. The gums usually employed seem to be too heating; the squills less so; but they are not very powerful, and sometimes inconvenient, by the constant nausea they occasion. The volatile alkali may be of service as an expectorant, but it ought to be reserved for an advanced state of the disease. Mucilaginous and oily demulcents appear to be useful, by allaying that acrimony of the mucus which occasions too frequent coughing; and which coughing prevents the stagnation and thickening of the mucus, and thereby its becoming mild. The receiving into the lungs the steams of warm water, impregnated with vinegar, has often proved useful in promoting expectoration; and, for this purpose, the machine called the *INHALER*, lately invented by Dr Mudge of Plymouth, promises to be of great service. But of all others, the antimonial emetics, given in nauseating doses, promise to be the most powerful for promoting expectoration. The kermes mineral hath been greatly recommended; but doth not seem to be more efficacious than emetic tartar or antimonial wine; and the dose of the kermes is much more uncertain than that of the others.

Though this disease often terminates by a spontaneous sweating, this evacuation ought not to be excited by art, unless with much caution. When, after some remission of the symptoms, spontaneous sweats arise, they may be encouraged; but it ought to be without much heat, and without stimulant medicines. If, however, the sweats be partial and clammy only, and a great difficulty of breathing still remain, it will be very dangerous to encourage them.

Physicians have differed much with regard to the use of opiates in pneumonic affections. It appears, however, that, in the beginning of the disease, and before bleeding and blistering have produced some remission of the pain, and of the difficulty of breathing, opiates have a bad tendency, by their increasing the difficulty of breathing and other inflammatory symptoms. But in a more advanced state of the disease, when the difficulty of breathing has abated, and when the urgent symptom is a cough, proving the chief cause of the continuance of pain and want of rest,

Pneumo-
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sia* rest, opiates may be employed with great advantage and safety. The interruption of the expectoration which they seem to occasion, is for a short time only; and they seem often to promote it, as they occasion a stagnation of what was by frequent coughing diffipated insensibly: and therefore give the appearance of what physicians have called *concocted matter*.

Opium combined with calomel has of late been highly extolled in this and other inflammatory diseases by Dr Hamilton of Lynn-Regis; who has given a full account of the success attending his practice with this remedy, for the space of 16 years, in the 9th volume of the Edinburgh Medical Commentaries. And since his recommendation, the same remedy has often been employed by others with great benefit.

186

VOMICA, or Abscess of the Lungs.

Vomica, Boerb. 835, Junck. 35.

Pleurodyne vomica, Sauv. sp. 21.

This sometimes follows pneumonia, though the case is not frequent. The symptoms of it so much resemble the phthisis, that it can most properly be treated of under that head.

187

EMPHYEMA.

This is another consequence of a pneumonia terminating unfavourably, and is occasioned by the effusion of a quantity of purulent matter into the cavity of the thorax, producing a lingering and painful disorder, very often incurable.

Description. The first sign of an empyema is a cessation of the pain in the breast, which before was continual: this is followed by a sensation of weight on the diaphragm; and a fluctuation of matter, sometimes making a noise that may be heard by the bystanders: the acute fever is changed into a hectic, with an exacerbation at night: a continual and troublesome dry cough remains. The respiration is exceedingly difficult, because the lungs are prevented by the matter from fully expanding themselves. The patient can lie easily on that side where the matter is effused, but not on the other, because then the weight of the matter on the mediastinum produces uneasiness. The more the hectic heat is augmented, the more is the body emaciated, and its strength decayed. In some there is danger of suffocation when they stoop down, which goes off when they alter that posture of the body; and in some there is a purulent spitting.—These symptoms are accompanied with great anxiety, palpitations of the heart, and faintings. Sometimes the patients have a sensation like a hot vapour ascending from the cavity of the thorax to their mouth. Others, in a more advanced state of the disease, have a putrid taste in the mouth. At the same time, profuse night-sweats waste the body, and greatly weaken the patient. The face at first grows red on that side where the matter lies, at last the Hippocratic face comes on, and the eyes become hollow. The pulse, especially on the affected side, is quick, but more frequently intermitting. Sometimes the nails are crooked, and pustules appear on the thorax; and frequently, according to the testimony of Hippocrates, the feet swell, and, on the affected side of the breast, there is an inflammation and swelling of the skin.

Causes, &c. An empyema may arise either from the bursting of a vomica of the lungs, or from a suppuration taking place after the inflammatory stage of the pneumonia; or sometimes from a suppuration in the case of a quinsy, when the inflammation had extended to the aspera arteria, from whence arises a kind of bloody spittle, and the patients are afflicted with an empyema, unless they die on the 7th day of the disease, according to the observation of Hippocrates. It may arise also from external violence, as wounds of the thorax, &c. blood extravasated, corrupted, or changed into pus. Like the vomica, it is a rare distemper, but may attack all those subject to pneumonia.

Prognosis. Very few recover after an empyema has been once formed, especially if the operation of paracentesis be neglected. After this operation is performed, if a great quantity of bloody fetid pus be discharged, if the fever continue, and if the patient spit up a purulent, pale, frothy, livid, or green matter, with a decay of strength, there is no hope: But when a small quantity of pus, of a white colour, not very fetid, is discharged; when the fever and thirst presently cease, the appetite returns, and fæces of a good consistence are discharged, the strength also returning in some degree; there is then hope of a perfect recovery. If the matter be not dried up in seven weeks time, the disease readily changes to a fistulous ulcer, which is very difficult to cure. An empyema affecting both sides of the thorax is more dangerous than that which affects only one.

Cure. This consists in evacuating the purulent matter contained in the cavity of the thorax, which is best done by the operation of paracentesis. See the article SURGERY. Afterwards the ulcer is to be treated with abstergent and consolidating medicines, and the same internal ones are to be given as in a PHTHISIS.

Gen. XIII. CARDITIS.

188

Inflammation of the HEART.

Carditis, Sauv. gen. III. Vog. 54.

Pericarditis, Vog. 53.

Carditis spontanea, Sauv. sp. 1. Senac. Traité de Cœur, lib. iv. chap. 7. Meckel, Mem. de Berlin, 1756.

Erysipelas pulmonis, Lomm. Observ. lib. ii.

Description. This disease is attended with all the symptoms of pneumonia, but in a higher degree; it is besides said to be accompanied with hydrophobic symptoms, fainting, palpitation of the heart, a seeming madness, a sunk and irregular pulse, watery eyes, and a dejected countenance, with a dry and black tongue. On dissection, the heart and pericardium are found very much inflamed, and even ulcerated, with many polypous concretions.

Causes, &c. The same as in the pneumonia.

Prognosis. In the carditis the prognosis is more unfavourable than in the pneumonia; and indeed, unless the disease very quickly terminates, it must prove fatal, on account of the constant and violent motion of the heart, which exasperates the inflammation, and increases all the symptoms.

Cure. Here bleeding is necessary in as great a degree

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degree as the patient can possibly bear, together with blistering, and the antiphlogistic regimen likewise carried to a greater height than in the pneumonia; but the general method is the same as in other inflammatory diseases.

189

Genus XIV. PERITONITIS.

Inflammation of the PERITONÆUM.

Sp. I. *Inflammation of the PERITONÆUM properly so called.*

Peritonitis, Vog. 62. Lieutad. Hist. anat. med. lib. i. obs. 3. Raygerus apud eund. lib. i. obs. 341. Morgagn. de sed. LVII. 20.

190

Sp. II. *Inflammation of the PERITONÆUM extended over the Omentum.*

Epiplöitis, Sauv. gen. 106. Sag. gen. 308.

Omentitis, Vog. 61.

Omenti inflammatio, Boerb. 958. et III. Van Swieten, Comm. Stork. An. Med. I. 132. Hulme on the puerperal fever.

191

Sp. III. *Inflammation of the PERITONÆUM stretched over the Mesentery.*

Mesenteritis, Vog. 60.

Enteritis mesenterica, Sauv. sp. 4.

192

Genus XV. GASTRITIS.

Inflammation of the STOMACH.

193

A. *GASTRITIS PHLEGMONODÆA, or the genuine Gastritis.*

Gastritis legitima, Sauv. sp. 1. Eller. de cogn. et cur. morb. sect. xii. Haller. obs. 14. hist. 3. Lieut. Hist. anat. Med. lib. i. 74.

Gastritis erysipelatosa, Sauv. sp. 4.

Cardialgia inflammatoria, Sauv. sp. 13. Tralles, de opio, sect. ii. p. 231.

THESE diseases Dr Cullen has thought proper to consider all under the general head of GASTRITIS, as there are no certain signs by which they can be distinguished from each other, and the method of cure must be the same in all.

Description. The inflammation of the stomach is attended with great heat and pain in the epigastric region, extreme anxiety, an almost continual and painful hiccough, with a most painful vomiting of every thing taken into the stomach. Sometimes a temporary madness ensues; and there is an instance in the Edinburgh Medical Essays of the disorder being attended with an hydrophobia. The pulse is generally more sunk than in other inflammations, and the fever inclines to the nature of a typhus. The disorder is commonly of the remitting kind, and during the remissions the pulse frequently intermits. During the height of the disease, a mortal phrenzy frequently supervenes. The disease terminates on the fourth, seventh, ninth day, or from the eleventh to the fifteenth; and is more apt to end in a gangrene than pneumonic inflammations, and more frequently in a scirrhus than in an abscess.

Causes, &c. The inflammation of the stomach may arise from any acrid substance taken into it; from a vehement passion; too large draughts of cold liquor, especially when the person is very hot; from a surfeit; a stoppage of perspiration; repulsion of the gout; inflammations of the neighbouring viscera; or from

external injuries, such as wounds, contusions, &c.—Gastritis. It affects chiefly those of a plethoric habit and hot bilious constitution.

Prognosis. This disease is always very dangerous, and the prognosis doubtful, which also must always be in proportion to the severity of the symptoms. A cessation of pain, coldness about the præcordia, great debility, with a languid and intermitting pulse, with an abatement of the hiccough, denote a gangrene and speedy death. From the sensibility of the stomach also, and its great connection with the rest of the system, it must be obvious, that an inflammation of it, by whatever causes produced, may be attended with fatal consequences; particularly, by the great debility it produces, it may prove suddenly fatal, without running through the usual course of inflammations.—Its tendency to admit of resolution may be known by its having arisen from no violent cause, by the moderate state of the symptoms, and by a gradual remission of these symptoms in the course of the first or at most of the second week of the disease. The tendency to gangrene may be suspected from the symptoms continuing with unremitting violence notwithstanding the use of proper remedies, and a gangrene already begun may be known by the symptoms above-mentioned, particularly great debility and sudden cessation of pain. The tendency to suppuration may be known by the symptoms continuing but in a moderate degree for more than one or two weeks, and by a considerable remission of the pain while a sense of weight and anxiety still remain. When an abscess has been formed, the frequency of the pulse is first abated: but soon after it increases, with frequent cold shivering, and an exacerbation in the afternoon and evening; followed by night-sweats, and other symptoms of hectic fever. These at length prove fatal, unless the abscess open into the cavity of the stomach, the pus be evacuated by vomiting, and the ulcer soon healed.

Cure. It appears from dissections, that the stomach may very often be inflamed when the characteristic marks of it have not appeared; and therefore we are often exposed to much uncertainty in the cure. But when we have sufficient evidence that a state of active inflammation has taken place in the stomach, the principal object to be aimed at is to obtain a resolution. Before, however, this can be accomplished, it will often be necessary to employ measures with the view of obviating urgent symptoms. When the symptoms appear in the manner above described, the cure is to be attempted by large and repeated bleedings employed early in the disease; and from these we are not to be deterred by the weakness of the pulse, for it will commonly become fuller and softer after the operation. A blister ought also to be applied to the region of the stomach; and the cure will be assisted by fomentations of the whole abdomen, and by frequent emollient and laxative glysters. The irritability of the stomach in this disease will admit of no medicines being thrown into it; and if any can be supposed necessary, they must be exhibited in glysters. Diluting drinks may be tried; but they must be of the very mildest kind, and given in very small quantities at a time. Opiates, in whatever manner exhibited, cannot be retained in the stomach during the first days of the disease; but when the violence of the disease shall have abated, and when the pain and vomiting

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vomiting recur at intervals only, opiates given in glysters may frequently be employed with advantage; and after bleeding and blisters no remedy is more effectual either in allaying the pain or vomiting. As soon as the stomach will retain any laxative, gentle refrigerant cathartics, taken by the mouth, such as the soda phosphorata, soda tartarifata, or the like, are productive of great benefit. A tendency to gangrene in this disease is to be obviated only by the means just now mentioned; and when it does actually supervene, it admits of no remedy. A tendency to suppuration is to be obviated by the same means employed early in the disease. After a certain period it cannot be prevented by any means whatever; and, when actually begun, must be left to nature; the only thing that can be done by art being to avoid all irritation.

194

B. *GASTRITIS ERYSIPELATOZA*, or the *Erysipelatous Gastritis*.

Description. This species of inflammation takes place in the stomach much more frequently than the former. From dissections it appears that the stomach has been often affected with inflammation, when neither pain nor fever had given any notice of it; and such is justly looked upon to have been of the erysipelatous kind. This kind of inflammation also is especially to be expected from acrimony of any kind applied to the stomach; and would certainly occur much more frequently, were not the interior surface of this organ commonly defended by mucus exuding in large quantity from the numerous follicles placed immediately under the villous coat. On many occasions, however, the exudation of mucus is prevented, or the liquid poured out is of a less viscid kind, so as to be less fitted to defend the subjacent nerves; and it is in such cases that acrid matters may readily produce an erysipelatous affection of the stomach.

In many cases, however, this kind of inflammation cannot be discovered, as it takes place without pain, pyrexia, or vomiting: but in some cases it may; namely, when it spreads into the œsophagus, and appears on the pharynx and on the whole internal surface of the mouth. When therefore an erysipelatous inflammation affects the mouth and fauces, and there shall be at the same time in the stomach an unusual sensibility to all acrids, and also a frequent vomiting, there can be little doubt of the stomach's being affected in the same manner. Even when no inflammation appears in the fauces, if some degree of pain be felt in the stomach, if there be a want of appetite, an anxiety and frequent vomiting, an unusual sensibility with regard to acrids, some thirst, and frequency of pulse, there will then be room to suspect an inflammation in the stomach; and such symptoms, after some time, have been known to discover their cause by the inflammation rising to the fauces or mouth. Inflammation of this kind is often disposed to pass from one place to another on the same surface, and, in doing so, to leave the place it had at first occupied. Such an inflammation has been known to spread successively along the whole tract of the alimentary canal; occasioning, when in the intestines, diarrhœa, and in the stomach vomitings; the diarrhœa ceasing when the vomitings came on, and the vomitings on the coming on of the diarrhœa.

Causes, &c. An erysipelatous inflammation may

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arise from acrid matters taken into the stomach; or from some internal causes not yet well known. It frequently occurs in putrid diseases, and in those recovering from fevers.

Cure. When the disease is occasioned by acrid matters taken internally, and these may be supposed still present in the stomach, they are to be washed out by drinking a large quantity of warm and mild medicines, and exciting vomiting. At the same time, if the nature of the acrimony and its proper corrector be known, this should be thrown in; or if a specific corrector be not known, some general demulcents should be employed.

These measures, however, are more suited to prevent than to cure inflammation after it has taken place. When this last may be supposed to have happened, if it be attended with a sense of heat, with pain and pyrexia, according to the degree of these symptoms, the measures proposed for the cure of the other kind are to be more or less employed. When an erysipelatous inflammation of the stomach has arisen from internal causes, if pain and pyrexia occur, bleeding may be employed in persons not otherwise weakened; but in case of its occurring in putrid diseases, or where the patients are already debilitated, bleeding is inadmissible; all that can be done being to avoid irritation, and only throwing into the stomach what quantity of acids and acescent aliments it shall be found able to bear. In some conditions of the body in which this disease is apt to occur, the Peruvian bark and bitters may seem to be indicated; but an erysipelatous state of the stomach will seldom allow them to be used.

Genus XVI. ENTERITIS,

195

Inflammation of the INTESTINES.

Enteritis, *Sauv. gen. 105. Lin. 29. Vog. 57. Sag. gen. 307.*

Intestinorum inflammatio, *Boerb. 959.*

Febris intestinorum inflammatoria ex mesenterio, *Hoffm. II. 170.*

Sp. I. *ENTERITIS PHLEGMONODEA*, or the *Acute Enteritis*.

196

Enteritis iliaca, *Sauv. sp. 1.*

Enteritis colica, *Sauv. sp. 2. Boerb. 963.*

Description. This disease shows itself by a fixed pain in the abdomen, attended with fever, vomiting, and costiveness. The pain is often felt in different parts of the abdomen, but more frequently spreads over the whole, and is particularly violent about the navel.

Causes, &c. Inflammations of the intestines may arise from the same causes as those of the stomach; though commonly the former will more readily occur from cold applied to the lower extremities, or to the belly itself. It is also found supervening on the spasmodic colic, incarcerated hernia, and volvulus.

Prognosis. Inflammations of the intestines have the same terminations with those of the stomach, and the prognosis in both cases is much the same.

Cure. The cure of enteritis is in general the same with that of gastritis: but in this disease there is commonly more opportunity for the introduction of liquids, of acid, acescent, and other cooling remedies, and even of laxatives; but as a vomiting frequently attends the enteritis, care must be taken not to excite that vomiting by the quantity or quality of any thing

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thrown into the stomach. With regard to the suppuration and gangrene of the intestines following the enteritis, the observations made respecting these terminations of gastritis are equally applicable in this disease.

197

Sp. II. *ENTERITIS ERYSIPELATA*, or *Erysipelatous Enteritis*.

Concerning this nothing farther can be said, than what hath been already delivered concerning the gastritis.

198

Genus XVII. HEPATITIS.

Inflammation of the LIVER.

Hepatitis, *Sauv.* gen. 113. *Lin.* 35. *Vog.* 58. *Sag.* gen. 312. *Boerb.* 914. *Hoffm.* II. 14. *Junck.* 66.

Description. The inflammation of the liver is thought to be of two kinds, acute and chronic; but the latter very often does not discover itself except by an abscess found in the liver after death, and which is supposed to have been occasioned by some degree of inflammation; for this reason the chronic inflammation often escapes observation, and we shall here only treat of the acute hepatitis.

The acute hepatitis is attended with considerable fever; a frequent, strong, and hard pulse; high coloured urine; an acute pain in the right hypochondrium, increased by pressing upon the part. The pain is very often in such a part of the side as to make it appear like a pleurisy; and frequently, like that, is increased on inspiration. The disease is also commonly attended with a cough, which is generally dry, but sometimes moist; and when the pain thus resembles a pleurisy, the patient cannot lie easily except upon the side affected. The pain is frequently extended to the clavicle, and to the top of the shoulder; and is attended sometimes with hiccough, and sometimes with vomiting. Some have added jaundice, or a yellowness of the eyes, to the symptoms of this distemper; but experience shows that it has often occurred without any such symptom.

When hepatitis is of the chronic kind, depending more on an accumulation and effusion in the liver, than in an increased action of its small vessels, the patient complains rather of a sense of weight than of pain; and the fever is by no means either acute or constant: but it often returns in paroxysms somewhat resembling the attacks of an intermittent. This disease is very slow in its progress, frequently continuing for many months, and at last terminating in a very considerable suppuration. In most cases, however, it may be discovered by careful examination of the region of the liver externally. By this means, a considerable enlargement of that viscus may in general be discovered.

Causes, &c. The remote causes of hepatitis are not always to be discerned, and many have been assigned on a very uncertain foundation. It has been supposed that the disease may be an affection either of the extremities of the hepatic artery, or those of the vena portarum; and the supposition is by no means improbable. The opinion, however, most commonly adopted is, that the acute hepatitis is an affection of the external membrane of the liver, and the chronic kind an af-

fection of the parenchyma of that viscus. The acute disease may be seated either on the convex or concave surface of the liver; and in the former case a more pungent pain and hiccough may be produced, and the respiration is more considerably affected. In the latter there occurs less pain; and a vomiting is produced, commonly by some inflammation communicated to the stomach. The inflammation on the concave surface of the liver may be readily communicated to the gall-bladder and biliary ducts: and this, perhaps, is the only case of idiopathic hepatitis attended with jaundice.

Prognosis. The inflammation of the liver, like others, may end by resolution, suppuration, or gangrene; and the tendency to the one or to the other of those events may be known from what has been already mentioned concerning the prognosis in gastritis. The resolution of hepatitis is often the consequence of, or is attended with, evacuations of different kinds. A hæmorrhage, sometimes from the nose, and sometimes from the hæmorrhoidal vessels, gives a solution of the disease. Sometimes the same thing is accomplished by a bilious diarrhœa; and sometimes the resolution is attended with sweating, and an evacuation of urine depositing a copious sediment. Sometimes it may be cured by an erysipelas appearing in some external part. When the disease has ended in suppuration, the pus collected may be discharged by the biliary ducts; or, if the suppurated part does not adhere any where closely to the neighbouring parts, it may be discharged into the cavity of the abdomen: but if, during the first state of inflammation, the affected part of the liver shall have formed a close adhesion to some of the neighbouring parts, the discharge after suppuration may be various, according to the different seat of the abscess. When seated on the convex part of the liver, if the adhesion be to the peritonæum lining the common teguments, the pus may make its way through these, and be discharged outwardly: or if the adhesion shall have been to the diaphragm, the pus may penetrate through this, and into the cavity of the lungs; from whence it may be discharged by coughing. When the abscess is seated on the concave part of the liver, in consequence of adhesions, the pus may be discharged into the stomach or intestines; and into these last, either directly, or by the intervention of the biliary ducts. Upon a consideration of all these different circumstances therefore, together with the general principles of inflammation, must the prognosis of this disease be established.

Cure. For the cure of hepatitis, we must have recourse to the general means of removing other inflammatory disorders. Bleeding is to be used according to the degree of fever and pain. Blisters are to be applied: fomentations of the external parts, emollient glysters, gentle laxatives, diluents and refrigerants, are also useful. The cure, however, particularly in warm climates, where the disease is much more common than it is in Britain, is chiefly trusted to mercury. Not only in cases of the chronic kind, but in acute hepatitis also, after an attempt has been made to alleviate the urgent symptoms by bleeding and blistering, recourse is immediately had to this powerful mineral. It is employed by different practitioners, and in different cases, under various forms. Some are very

Hepatitis.

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very fond of the use of calomel. But the preference is in general given, and perhaps with justice, to friction with mercurial ointment over the region of the liver. But under whatever form it may be employed, it is necessary that it should be introduced to such an extent as to keep the patient on the verge of salivation for some length of time; the duration being regulated by the circumstances of the case.

From the liberal use of mercury, there can be no doubt that a successful resolution has been obtained in many cases, which would otherwise have infallibly terminated in suppuration. But notwithstanding the most careful employment of it in some cases, suppuration will ensue; and then it is very doubtful whether any benefit will be derived from the continuance of it. But when a suppuration has been formed, and the abscess points outwardly, the part must be opened, the pus evacuated, and the ulcer healed according to the ordinary methods in use for healing abscesses and ulcers in other parts.

199

Genus XVIII. SPLENITIS.

*Inflammation of the SPLEEN.*Splenitis, *Sauv.* gen. 114. *Lin.* 36. *Vog.* 59.*Junck.* 67. *Sag.* gen. 313.Lienis inflammatio, *Boerb.* 958. & *Van Swieten.* Comm.Splenitis phlegmonodæa, *Sauv.* sp. 1. *Forest.* l. xx.obf. 5. 6. *De Haen*, apud *Van Swieten*, p. 958.Pleuritis splenica, *Sauv.* sp. 19.Splenalgia luppuratoria, *Sauv.* sp. 3.

Description. This disease, according to *Juncker*, comes on with a remarkable shivering succeeded by a most intense heat and very great thirst; a pain and tumor are perceived in the left hypochondrium, and the paroxysms for the most part assume a quartan form. When the patients expose themselves for a little to the free air, their extremities immediately grow very cold. If an hæmorrhagy happens, the blood flows out of the left nostril. The other symptoms are the same with those of the hepatitis. Like the liver, the spleen often is also subject to a chronic inflammation, which often happens after agues, and is called the *ague cake*, though that name is also frequently given to a scirrhus tumor of the liver succeeding intermittents.

Causes, &c. The causes of this distemper are in general the same with those of other inflammatory disorders; but those which determine the inflammation to that particular part more than another, are very much unknown. It attacks persons of a very plethoric and sanguine habit of body rather than others.

Prognosis. What has been said of the inflammation of the liver applies also to that of the spleen, tho' the latter is less dangerous than the former. Here also a vomiting of black matter, which in other acute diseases is such a fatal omen, sometimes proves critical, according to the testimony of *Juncker*. Sometimes the hæmorrhoids prove critical; but very often the inflammation terminates by scirrhus.

Cure. This is not at all different from what has been already laid down concerning the hepatitis.

200

Genus XIX. NEPHRITIS.

*Inflammation of the KIDNEYS.*Nephritis, *Sauv.* gen. 115. *Lin.* 37. *Vog.* 65.*Sag.* gen. 314.Nephritis vera, *Sauv.* sp. 1.

Nephritis.

Description. The nephritis has the same symptoms in common with other inflammations; but its distinguishing mark is the pain in the region of the kidney, which is sometimes obtuse, but more frequently pungent. The pain is not increased by the motion of the trunk of the body so much as a pain of the rheumatic kind affecting the same region. It may also frequently be distinguished by its shooting along the course of the ureter, and it is often attended with a drawing up of the testicle, and a numbness of the limb on the side affected; though indeed these symptoms most commonly attend the inflammation arising from a calculus in the kidney or ureter. The disease is also attended with frequent vomiting, and often with costiveness and colic pains. The urine is most commonly of a deep red colour, and is voided frequently and in a small quantity at a time. In more violent cases the urine is commonly colourless.

Causes, &c. The remote causes of this disease may be various; as external contusion, violent or long-continued riding; strains of the muscles of the back incumbent on the kidneys; various acrids in the course of circulation conveyed to the kidneys; and perhaps some other internal causes not yet well known: the most frequent is that of calculous matter obstructing the *tubuli uriniferi*, or calculi formed in the pelvis of the kidneys, and either sticking there or falling into the ureter.

Prognosis. This is not different from that of other inflammatory diseases.

Cure. When any of those causes operating as inducing the inflammation still continue to act, the first object in the cure must be the removal of these: but the principal intention to be had in view, is the resolution of the inflammation which has already taken place. But when, notwithstanding efforts for this purpose, the disease terminates in suppuration, it must be the endeavour of the practitioner to promote the discharge of purulent matter, and the healing of the ulceration in the kidney.

These different objects are principally accomplished by bleeding, external fomentation, frequent emollient glysters, antiphlogistic purgatives, and by the free use of mild and demulcent liquids. The use of blisters is scarce admissible, or at least will require great care to avoid any considerable absorption of the cantharides.

The other species of nephritis enumerated by authors are only symptomatic.

Genus XX. CYSTITIS.

Inflammation of the BLADDER.

201

Cystitis, *Sauv.* gen. 108. *Lin.* 31. *Vog.* 66.*Sag.* gen. 309.Inflammatio vesicæ, *Hoffm.* II. 157.The CYSTITIS from *Internal Causes.*

202

Cystitis spontanea, *Sauv.* sp. 1.The CYSTITIS from *External Causes.*

203

Cystitis a cantharidibus, *Sauv.* sp. 2.Cystitis traumatica, *Sauv.* sp. 3.

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The inflammation of the bladder from internal causes is a very rare distemper; and when it does at any time occur, is to be cured in the same manner with other inflammations, avoiding only the use of cantharides. When the disease arises from the internal use of these flies, camphor is recommended, besides other cooling medicines, and particularly cooling and emollient glysters.

Genus XXI. HYSTERITIS.

Inflammation of the UTERUS.

204

Hysteritis, *Lin.* 38. *Vog.* 63.Metritis, *Sauv.* gen. 107. *Sag.* gen. 315.Inflammatio et febris uterina, *Hoffm.* II. 156.

Description. This disease is often confounded with that called the *puerperal* or *child-bed fever*; but is essentially distinct from it, as will be shown in its proper place. The inflammation of the uterus is often apt to terminate by gangrene: there is a pain in the head, with delirium; and the uterine region is so exceedingly tender, that it cannot bear the most gentle pressure without intolerable pain. When the *fundus uteri* is inflamed, there is great heat, throbbing, and pain, above the pubes; if its posterior part, the pain is more confined to the loins and rectum, with a tenesmus; if its anterior part, it shoots from thence towards the neck of the bladder, and is attended with a frequent irritation to make water, which is voided with difficulty; and if its sides or the ovaria are affected, the pains will then dart into the inside of the thighs.

Causes, &c. Inflammations of the uterus, and indeed of the rest of the abdominal viscera, are very apt to take place in child-bed women; the reason of which seems to be the sudden change produced in the habit, and an alteration in the course of the circulating blood by the contraction of the uterus after delivery. The pressure of the gravid uterus being suddenly taken off from the *aorta descendens* after delivery, the resistance to the impulse of the blood passing through all the vessels derived from it, and distributed to the contiguous viscera, will be considerably lessened: it will therefore rush into those vessels with a force superior to their resistance; and, by putting them violently on the stretch, may occasion pain, inflammation, and fever. This contraction of the uterus also renders its vessels impervious to the blood which had freely passed through them for the service of the child during pregnancy; and consequently a much larger quantity will be thrown upon the contiguous parts, which will still add to their distension, and increase their tendency to inflammation.

Prognosis. An inflammation of the uterus generally may be expected to produce an obstruction of the lochia; but the fever produced seldom proves fatal, unless the inflammation be violent, and end in a gangrene.

Cure. This is to be attempted by the same general means already recommended, and the management of this disorder entirely coincides with that of the puerperal fever.

Genus XXII. RHEUMATISMUS.

The RHEUMATISM.

205

Rheumatismus, *Sauv.* gen. 185. *Lin.* 62. *Vog.*138. *Boerb.* 1400. *Junc.* 19.N^o 205.Dolores rheumatici et arthritici, *Hoffm.* II. 317.Myositis, *Sag.* gen. 301.Rheumatif-
mus.

The Acute RHEUMATISM.

Rheumatismus acutus, *Sauv.* sp. 1.Rheumatismus vulgaris, *Sauv.* sp. 2.

A. The LUMBAGO, or Rheumatism in the muscles of the Loins. 206

Lumbago rheumatica, *Sauv.* gen. 212. *Sag.* p. 1.Nephralgia rheumatica, *Sauv.* sp. 4.

B. The SCIATICA, Ischias, or Hip-Gout. 207

Ischias rheumaticum, *Sauv.* 213. sp. 10.

C. The Bastard PLEURISY, or Rheumatism in the muscles of the Thorax. 208

Pleurodyne rheumatica, *Sauv.* gen. 148. sp. 3.Pleuritis spuria, *Boerb.* 878.

The other species, which are very numerous, are all symptomatic; as,

Lumbago plethorica, *Sauv.* sp. 3.Ischias sanguineum, *Sauv.* sp. 2.Pleurodyne plethorica, *Sauv.* sp. 1.Rheumatismus hystericus, *Sauv.* sp. 7.Ischias hystericum, *Sauv.* sp. 3.Pleurodyne hysterica, *Sauv.* sp. 6.Rheumatismus saltatorius, *Sauv.* sp. 8.Pleurodyne flatulenta, *Sauv.* sp. 4.Pleurodyne a spasmate, *Sauv.* sp. 9.Rheumatismus scorbuticus, *Sauv.* sp. 4.Lumbago scorbutica, *Sauv.* sp. 5.Pleurodyne scorbutica, *Sauv.* sp. 11.Ischias syphiliticum, *Sauv.* sp. 7.Pleurodyne venerea, *Sauv.* sp. 5.Lumbago sympathica, *Sauv.* sp. 13.*a mesenterii glandulis induratis**a pancreate tumido, purulento, scirrhuso, putri,**ab induratis pyloro, vena cava, pancreate**a rene scirrhuso, putrefacto**ab abscessu circa venae cavae bifurcationem**a vermibus intra renes.*Lumbago a faburra, *Sauv.* sp. 8.Pleurodyne a cacochylia, *Sauv.* sp. 7.Rheumatismus saltatorius verminosus, *Sauv.* sp. 8.Ischias verminosum, *Sauv.* sp. 8.Pleurodyne verminosa, *Sauv.* sp. 2.Rheumatismus metallicus, *Sauv.* sp. 10.Lumbago a hydrothorace, *Sauv.* sp. 14.Lumbago pseudoischuria, *Sauv.* sp. 16.Pleurodyne a rupto oesophago, *Sauv.* sp. 20.Pleurodyne rachitica, *Sauv.* sp. 13.Ischias a sparganosi, *Sauv.* sp. 5.Pleurodyne catarrhalis, *Sauv.* sp. 14.Rheumatismus necroseos, *Sauv.* sp. 14.Rheumatismus dorsalis, *Sauv.* sp. 11.Lumbago a satyriasi, *Sauv.* sp. 15.Rheumatismus febriculus, *Sauv.* sp. 9.Lumbago febrilis, *Sauv.* sp. 4.

&c. &c.

Description. The rheumatism is particularly distinguished by pains affecting the joints, and for the most part the joints alone; but sometimes also the muscular parts. Very often they shoot along the course of the muscles

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muscles from one joint to another, and are always much increased by the action of the muscles belonging to the joint or of joints affected. The larger joints are those most frequently affected, such as the hip-joint and knees of the lower extremities, and the shoulders and elbows of the upper ones. The ancles and wrists are also frequently affected; but the smaller joints, such as those of the toes or fingers, seldom suffer. Sometimes the disease is confined to one part of the body, yet very frequently it affects many parts of it; and then it begins with a cold stage, which is immediately succeeded by the other symptoms of pyrexia, and particularly by a frequent, full, and hard pulse. Sometimes the pyrexia is formed before any pains are perceived; but more commonly pains are felt in particular parts before any symptoms of pyrexia occur. When no pyrexia is present, the pain may be confined to one joint only; but when any considerable pyrexia takes place, though the pain may chiefly be felt in one joint, yet it seldom happens that the pains do not affect several joints, often at the very same time, but for the most part shifting their place, and having abated in one joint they become more violent in another. They do not commonly remain long in the same joint, but frequently shift from one to another, and sometimes return to joints formerly affected; and in this manner the disease often continues for a long time. The fever attending these pains has an exacerbation every evening, and is most considerable during the night, when the pains also become more violent; and it is at the same time that the pains shift their place from one joint to another. These seem to be also increased during the night by the body being covered more closely, and kept warmer.

A joint, after having been for some time affected with pain, commonly becomes also affected with some swelling and redness, which is painful to the touch. It seldom happens that a swelling coming on does not take off the pain entirely, or secure the joint against a return of it. This disease is commonly attended with more or less sweating, which occurs early, but is seldom free or copious, and seldom either relieves from the pains or proves critical. The urine is high coloured, and in the beginning without sediment. This, however, does not prove entirely critical, for the disease often continues long after such a sediment has appeared in the urine. The blood is always fizy. The acute rheumatism differs from all other inflammatory diseases, in not being liable to terminate in suppuration: this almost never happens; but the disease sometimes produces effusions of a transparent gelatinous fluid into the sheathes of the tendons: but if these effusions be frequent, it is certain that the liquor must very frequently be absorbed; for it very seldom happens, that considerable or permanent tumors have been produced, or such as required to be opened and to have the contained fluid evacuated. Such tumors, however, have sometimes occurred, and the opening made in them has produced ulcers very difficult to heal.

Sometimes the rheumatism will continue for several weeks; but it seldom proves fatal, and it is rare that the pyrexia continues to be considerable for more than two or three weeks. While the pyrexia abates in its violence, if the pains of the joints continue, they

Vol. XI. Part I.

are less violent; more limited in their place, being confined commonly to one or a few joints only; and are less ready to change their place.

Rheumatism.

It is often a very difficult matter to distinguish rheumatism from gout: but in rheumatism there in general occurs much less affection of the stomach; it affects chiefly the larger joints, and several of these are often affected with severe pain at the same time: it occurs at an earlier period of life than gout; it is not observed to be hereditary; and it can in general be traced to some obvious exciting cause, particularly to the action of cold.

Causes, &c. This disease is frequent in cold, and more uncommon in warm, climates. It appears most frequently in autumn and spring; less frequently in winter, while the frost is constant; and very seldom during the heat of summer. It may, however, occur at any season, if vicissitudes of heat and cold be for the time frequent. For the most part, the acute rheumatism arises from the application of cold to the body when unusually warm; or when the cold is applied to one part of the body, whilst the other parts are kept warm; or lastly, when the application of the cold is long continued, as when moist or wet clothes are applied to any part of the body.—These causes may affect persons of all ages; but the rheumatism seldom appears either in very young or in elderly persons, and most commonly occurs from the age of puberty to that of 35. These causes may also affect persons of any constitution, but they most commonly affect those of a sanguine temperament.

With respect to the proximate cause of rheumatism, there have been various opinions. It has been imputed to a peculiar acrimony; of which, however, there is no evidence; and the consideration of the remote causes, the symptoms, and cure, render it very improbable. A disease of a rheumatic nature, however, may be occasioned by an acrid matter applied to the nerves, as is evident from the tooth-ach, a rheumatic affection generally arising from a carious tooth. Pains arising from deep-seated suppurations may also resemble the rheumatism; and many cases have occurred in which such suppurations occasioned pains resembling the lumbago and ischias; but from what hath been already said, it seems improbable that ever any rheumatic case should end in suppuration.

The proximate cause of rheumatism hath by many been supposed to be a lentor in the fluids obstructing the vessels of the part; but in the former part of this treatise, sufficient reasons have been already laid down for rejecting the doctrine of lentor. While we cannot therefore find either evidence or reason for supposing that the rheumatism depends on any change in the state of the fluids, we must conclude that the proximate cause of it is the same with that of other inflammations not depending upon a direct stimulus.

In the case of rheumatism, it is supposed that the most common remote cause of it, that is, cold applied, operates especially on the vessels of the joints, these being less covered by a cellular texture than those of the intermediate parts of the limbs. It is farther supposed, that the application of cold produces a constriction of the extreme vessels, and at the same time an increase of tone or phlogistic diathesis in the course of them, from which arises an increased impetus of the

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the blood, and at the same time a resistance to the free passage of it, and consequently inflammation and pain. It is also supposed, that the resistance formed, excites the *vis medicatrix* to a further increase of the impetus of the blood; and to support this, a cold stage arises, a spasm is formed, and a pyrexia and phlogistic diathesis are produced in the whole system.

Hence the cause of rheumatism appears to be exactly analogous to that of inflammations depending on an increased afflux of blood to a part while it is exposed to the action of cold. But there seems to be further in this disease some peculiar affection of the muscular fibres. These seem to be under some degree of rigidity; and therefore less easily admit of motion, and are pained upon the exertions of it. This also seems to be the affection which gives opportunity to the propagation of pains from one joint to another, and which are most severely felt in the extremities terminating in the joints, because beyond these the oscillations are not propagated. This affection of the muscular fibres explains the manner in which strains and spasms produce rheumatic affections; and, on the whole, shows, that with an inflammatory affection of the sanguiferous system, there is also in rheumatism a peculiar affection of the muscular fibres, which has a considerable share in producing the phenomena of the disease. And it would even appear, that in what has commonly been called *acute rheumatism*, in contradistinction to the chronic, of which we are next to treat, there exists not only a state of active inflammation in the affected parts, but also of peculiar irritability; and that this often remains after the inflammation is very much diminished or has even entirely ceased. Hence a renewal of the inflammation and recurrence of the pain take place from very slight causes; and in the treatment of the disease both the state of inflammation and irritability must be had in view.

Cure. For counteracting the state of active inflammation, the chief aim of the practitioner must be to diminish the general impetus of the circulation, and the impetus at the part particularly affected. For counteracting the state of irritability, he must endeavour to remove the disposition to increased action in the vessels; to prevent the action of causes exciting painful sensations; and to obviate their influence on the part. The cure therefore requires, in the first place, an antiphlogistic regimen, and particularly a total abstinence from animal-food, and from all fermented or spirituous liquors; substituting a mild vegetable or milk diet, and the plentiful use of soft diluting liquors. On this principle also, blood-letting is the chief remedy of acute rheumatism. The blood is to be drawn in large quantity; and the bleeding is to be repeated in proportion to the frequency, fulness, and hardness of the pulse, and the violence of the pain. For the most part, large and repeated bleedings during the first days of the disease seem to be necessary, and accordingly have been very much employed; but to this some bounds are to be set; for very profuse bleedings occasion a slow recovery, and if not absolutely effectual, are ready to produce a chronic rheumatism.

To avoid that debility of the system which general bleedings are apt to occasion, the urgent symptom of pain may be often relieved by topical bleedings; and

when any swelling or redness have come upon a joint, the pain may very certainly be relieved by topical bleedings: but as the pain and continuance of the disease seem to depend more upon the phlogistic diathesis of the whole system than upon the affection of particular parts, so topical bleedings will not supply the place of the general bleedings proposed above.

To take off the phlogistic diathesis prevailing in this disease, purging may be useful, if procured by medicines which do not stimulate the whole system, as neutral salts, and other medicines which have a refrigerant power. Purging, however, is not so useful as bleeding in removing the phlogistic diathesis; and when the disease has become general and violent, frequent stools are inconvenient, and even hurtful, by the motion and pain which they occasion.

Next to blood-letting, nothing is of so much service, both in alleviating the pains in this disease and in removing the phlogistic diathesis, as the use of sudorifics: and of all the medicines belonging to this class, what has commonly been known by the name of Dover's powder, a combination of powder of ipecacuan and opium, is the most convenient and the most effectual. Copious sweating, excited by this medicine, and supported for 10 or 12 hours by tepid diluents, such as decoction of the woods, or the like, will in most instances produce a complete remission of the pain: and by this practice, combined with blood-letting and proper regimen, the disease may often be entirely removed.

If, however, after complete intermissions from pain for some length of time have been obtained by these means, it be found that there is a great tendency to a return of the pains without any obvious cause, recourse may be had with very great benefit to the use of the Peruvian bark. By the early use of this, where a complete intermission from pain is obtained, the necessity of repeated blood-letting and sweating is often superseded; but where a complete remission cannot be obtained, it has been suspected by some to be hurtful: and in these cases, when blood-letting and sudorifics have been pushed as far as may be thought prudent without being productive of the desired effect, very great benefit is often obtained from the use of calomel combined with opium, as recommended in the Edinburgh Medical Commentaries by Dr Hamilton of Lynn-Regis.

In this disease, external applications are of little service. Fomentations in the beginning of the disease rather aggravate than relieve the pains. The rubefacients and camphire are more effectual: but they commonly only shift them from one part to another, and do not prove any cure of the general affection. Blistering may also be very effectual in removing the pain from a particular part; but will be of little use, except where the pains are much confined to one place.

ARTHRODYNIA, or Chronic RHEUMATISM.

Rheumatismus chronicus Auctorum.

Description. When the pyrexia attending the acute rheumatism has ceased; when the swelling and redness of the joints are entirely gone, but pains still continue to affect certain joints, which remain stiff, feel uneasy upon

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Phlegmasia upon motion, changes of weather, or in the night-time only, the disease is then called the *chronic rheumatism*, as it often continues for a very long time.

The limits between the acute and chronic rheumatisms are not always exactly marked. When the pains are still ready to shift their place; when they are especially severe in the night-time; when, at the same time, they are attended with some degree of pyrexia, and with some swelling, and especially some redness, of the joints; the disease is to be considered as partaking of the nature of the acute rheumatism. But when there is no longer any degree of pyrexia remaining; when the pained joints are without redness; when they are cold and stiff; when they cannot easily be made to sweat; or when, while a free and warm sweat is brought out on the rest of the body, it is only clammy and cold on the pained joints; and when, further, the pains of these are increased by cold, and relieved by heat, applied to them; the case is to be considered as that of a purely chronic rheumatism: or perhaps more properly the first of the conditions now described may be termed the state of irritability, and the second the state of atony.

The chronic rheumatism, or rather the atonic, may affect different joints; but is especially apt to affect those which are surrounded with many muscles, and those of which the muscles are employed in the most constant and vigorous exertions. Such is the case of the vertebræ of the loins, the affection of which is named *lumbago*; or of the hip-joint, when the disease is named *ischias* or *sciatica*.

Violent strains and spasms occurring on sudden and somewhat violent exertions, bring on rheumatic affections, which at first partake of the acute, but very soon change into the nature of the chronic, rheumatism.—Such are frequently the *lumbago*, and other affections, which seem to be more seated in the muscles than in the joints. The distinction of the rheumatic pains from those resembling them which occur in the scophylis and scurvy must be obvious, either from the seat of the pains, or from the concomitant symptoms peculiar to those diseases. The distinction of the rheumatism from the gout will be more fully understood from what is laid down under the genus *Podagra*.

Causes, &c. The phenomena of the purely chronic rheumatism lead us to conclude, that its proximate cause is an atony both of the blood-vessels and of the muscular fibres of the part affected, together with such a degree of rigidity and contraction in the latter as frequently attend them in a state of atony: and indeed this atony, carried to a certain extent, gives rise to a state of paralysis, with an almost total loss of motion in the affected limbs. The paralytic state of rheumatism therefore may be pointed out as a fourth condition of the disease, often claiming the attention of the practitioner.

Cure. From the view just now given of the proximate cause of chronic rheumatism, the chief indication of cure must be, to restore the activity and vigour of the part, which is principally to be done by increasing the tone of the moving fibres, but which may sometimes also be aided by giving condensation to the simple solid. When, however, the disease has degenerated into the state of paralysis, the objects to be aimed at are, the restoration of a due condition to the

nervous energy in the part affected; the obtaining free circulation of blood through the vessels of the part; and the removal of rigidity in membranes and ligaments.

For answering these purposes, a great variety of remedies, both external and internal, are had recourse to. The chief of the external are, the supporting the heat of the part, by keeping it constantly covered with flannel; the increasing the heat of the part by external heat, applied either in a dry or humid form; the diligent use of the flesh-brush, or other means of friction; the application of electricity in sparks or shocks; the application of cold water by affusion or immersion; the application of essential oils of the most warm and penetrating kind; the application of salt brine; the employment of the warm bath or of the vapour baths, either to the body in general or to particular parts; and, lastly, the employment either of exercise of the part itself as far as it can easily bear, or by riding or other modes of gestation.

The internal remedies are, Large doses of essential oils drawn from resinous substances, such as turpentine. Substances containing such oils, as guaiac. Volatile alkaline salts. These or other medicines are directed to procure sweat; and calomel, or some other preparation of mercury, in small doses, may be continued for some time. Besides these, there are several others recommended. The cicuta, aconitum, and hyosciamus, have in particular been highly extolled; and an infusion of the rhododendron chrysanthum is said to be employed by the Siberians with very great success. An account of the Siberian mode of practice is given by Dr Matthew Guthrie of Petersburg, in the fifth volume of the Edinburgh Medical Commentaries, and has been followed with success at other places.

G. XXIV. ODONTALGIA, the TOOTH-ACH.

215

Odontalgia, *Sauv.* gen. 198. *Lin.* 45. *Vog.* 145. *Sag.* gen. 157. *Junck.* 25.

Odontalgia sive rheumatismus odontalgicus, *Hoffm.* II. 330.

Odontalgia cariola, *Sauv.* sp. 1.

Odontalgia scorbutica, *Sauv.* sp. 4.

Odontalgia catarrhalis, *Sauv.* sp. 3.

Odontalgia arthritica, *Sauv.* sp. 6.

Odontalgia gravidarum, *Sauv.* sp. 2.

Odontalgia hysterica, *Sauv.* sp. 3.

Odontalgia stomachica, *Sauv.* sp. 9.

Description. This well-known disease makes its attack by a most violent pain in the teeth, most frequently in the *molares*, more rarely in the *incisores*, reaching sometimes up to the eyes, and sometimes backward into the cavity of the ear. At the same time there is a manifest determination to the head, and a remarkable tension and inflation of the vessels takes place, not only in the parts next to that where the pain is seated, but over the whole head.

Causes, &c. The toothach is sometimes merely a rheumatic affection, arising from cold, but more frequently from a carious tooth. It is also a symptom of pregnancy, and takes place in some nervous disorders; it may attack persons at any time of life, tho' it is most frequent in the young and plethoric.

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Cure. Many empirical remedies have been proposed for the cure of the tooth-ach, but none have in any degree answered the purpose. When the affection is purely rheumatic, blistering behind the ear will almost always remove it; but when it proceeds from a carious tooth, the pain is much more obstinate. In this case it has been recommended to touch the pained part with a hot iron, or with oil of vitriol, in order to destroy the aching nerve; to hold strong spirits in the mouth; to put a drop of oil of cloves into the hollow of the tooth, or a pill of equal parts of opium and camphire: but one of the most useful applications of this kind is strong nitrous acid, diluted with three or four times its weight of spirit of wine, and introduced into the hollow of a tooth from which great pain arises, either by means of an hair pencil or a little cotton. The Peruvian bark has also been recommended, and perhaps with more justice, on account of its tonic and antiseptic powers; but very often all these remedies will fail, and the only infallible cure is to draw the tooth. See SURGERY.

immediately preceding it, the appetite becomes keener than usual.

Podagra.

The circumstances of paroxysms are chiefly the following. They come on most commonly in the spring, and sooner or later according as the vernal heat succeeds sooner or later to the winter's cold; and, perhaps, sooner or later also, according as the body may happen to be more or less exposed to vicissitudes of heat and cold.

The attacks are sometimes felt first in the evening, but more commonly about two or three o'clock in the morning. The paroxysm begins with a pain affecting one foot, most commonly in the ball or first joint of the great toe, but sometimes in other parts of the foot. With the attack of this pain, there is commonly more or less of a cold shivering; which, as the pain increases, gradually ceases; and is succeeded by a hot stage of pyrexia, which continues for the same time with the pain itself. From the first attack, the pain becomes, by degrees, more violent, and continues in this state with great restlessness of the whole body till next midnight, after which it gradually remits; and, after it has continued for 24 hours from the commencement of the first attack, it commonly ceases almost entirely; and, with the coming on of a gentle sweat, allows the patient to fall asleep. The patient, upon coming out of this sleep in the morning, finds the pained part affected with some redness and swelling, which, after having continued for some days, gradually abate.

When a paroxysm has thus come on, although the violent pain after 24 hours be considerably abated, the patient is not entirely relieved from it. For some days he has every evening a return of more considerable pain and pyrexia, and these continue with more or less violence till morning. After going on in this manner for several days, the disease sometimes goes entirely off, not to return till after a long interval.

When the disease, after having thus remained for some time in a joint, ceases entirely, it generally leaves the person in very perfect health, enjoying greater ease and alacrity in the functions of both body and mind than he had for a long time before experienced.

At the beginning of the disease, the returns of it are sometimes only once in three or four years: but as it advances, the intervals become shorter, and at length the attacks are annual; afterwards they come twice each year; and at length recur several times during the course of autumn, winter, and spring; and as, when the fits are frequent, the paroxysms become also longer, so, in the advanced state of the disease, the patient is hardly ever tolerably free from it, except perhaps for two or three months in summer.

The progress of the disease is also marked by the parts which it affects. At first, it commonly affects one foot only; afterwards every paroxysm affects both feet, the one after the other; and as the disease proceeds, it not only affects both feet at once, but, after having ceased in the foot which was secondly attacked, returns again into the first, and perhaps a second time also into the other. Its changes of places are not only from one foot to another, but from the feet into other joints, especially those of the upper and lower extremities; so that there is hardly a joint of the body which,

211 GENUS XXIV. PODAGRA, the Gout.

Podagra, *Vog.* 175. *Boerb.* 1254.

Febris podagrica, *Vog.* 69.

Arthritis, *Sauv.* gen. 183. *Lin.* 60. *Vog.* 139. *Sag.* gen. 142.

Dolor podagricus et arthriticus verus, *Hoffm.* II. 339.

Dolores arthritici, *Hoffm.* II. 317.

Affectus spastico-arthritici, *Junck.* 46.

212 Sp. I. The Regular Gout.

Arthritis podagra, *Sauv.* sp. 1.

Arthritis rachialgica, *Sauv.* sp. 11.

Arthritis æstiva, *Sauv.* sp. 4.

213 Sp. II. The Atonic Gout.

Arthritis melancholica, *Sauv.* sp. 6.

Arthritis hiemalis, *Sauv.* sp. 2.

Arthritis chlorotica, *Sauv.* sp. 5.

Arthritis asthmatica, *Sauv.* sp. 9.

214 Sp. III. The Retrocedent Gout.

215 Sp. IV. The Mislplaced Gout.

Description. What we call a *paroxysm of the gout* is principally constituted by an inflammatory affection of some of the joints. This sometimes comes on suddenly, without any warning, but is generally preceded by several symptoms; such as the ceasing of a sweating which the feet had been commonly affected with before; an unusual coldness of the feet and legs; a frequent numbness, alternating with a sense of prickling along the whole of the lower extremities; frequent cramps of the muscles of the legs; and an unusual turgescence of the veins.

While these symptoms take place in the lower extremities, the body is affected with some degree of torpor and languor, and the functions of the stomach in particular are more or less disturbed. The appetite is diminished; and flatulency, or other symptoms of indigestion, are felt. These symptoms take place for several days, sometimes for a week or two, before a paroxysm comes on; but commonly, upon the day

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which, on one occasion or other, is not affected. It sometimes affects two different joints at the very same time; but more commonly it is at any one time severe in a single joint only, and passes in succession from one joint to another; so that the patient's affliction is often protracted for a long time.

When the disease has often returned, and the paroxysms have become very frequent, the pains are commonly less violent than they were at first; but the patient is more affected with sickness, and the other symptoms of the atonic gout, which shall be hereafter mentioned.

After the first paroxysm of the disease, the joints which have been affected are entirely restored to their former suppleness and strength: but after the disease has recurred very often, the joints affected do neither so suddenly nor entirely recover their former state, but continue weak and stiff; and these effects at length proceed to such a degree, that the joints lose their motion entirely.

In many persons, but not in all, after the disease has frequently recurred, concretions of a chalky nature are formed upon the outside of the joints, and for the most part immediately under the skin. The matter seems to be deposited at first in a fluid form, afterwards becoming dry and firm. In their firm state, these concretions are a hard earthy substance, very entirely soluble in acids. After they have been formed, they contribute, with other circumstances, to destroy the motion of the joint.

In most persons who have laboured under the gout for many years, a nephritic affection comes on, and discovers itself by all the symptoms which usually attend calculous concretions in the kidneys, and which we shall have occasion to describe in another place. All that is necessary to be observed here is, that the nephritic affection alternates with paroxysms of the gout; and that the two affections, the nephritic and the gouty, are hardly ever present at the same time. This also may be observed, that children of gouty or nephritic parents commonly inherit one or other of these diseases; but whether the principal disease of the parent may have been either gout or nephritis alone, some of the children have the one and some the other. In some of them, the nephritic affection occurs alone, without any gout supervening; and this happens to be frequently the case with the female children of gouty parents.

In the whole of the history already given, we have described the most common form of the disease, and which therefore, however diversified in the progress of it, may be still called the regular state of the gout.— Upon some occasions, however, the disease assumes different appearances: but as we suppose the disease to depend always upon a certain diathesis, or disposition of the system; so every appearance which we can perceive to depend upon that same disposition, we still consider as a symptom and case of the gout. The principal circumstance, in what we term the *regular gout*, is the inflammatory affection of the joints; and whatever symptoms we can perceive to be connected with, or to depend upon, the disposition which produces that inflammatory affection, but without its taking place or being present at the same time, we name the *irregular gout*.

Of such irregular gout there are three different states, which may be named the *atonic*, the *retrocedent*, and the *misplaced* gout. Podagra.

The first is, when the gouty diathesis prevails in the system; but, from certain causes, does not produce the inflammatory affection of the joints. In this case, the morbid symptoms which appear, are chiefly affections of the stomach, such as loss of appetite, indigestion, and its various attendants of sickness, nausea, vomiting, flatulency, acid eructations, and pains in the region of the stomach. These symptoms are frequently accompanied with pains and cramps in several parts of the trunk and the upper extremities of the body, which are relieved by the discharge of wind from the stomach. Together with these affections of the stomach, there commonly occurs a costiveness; but sometimes a looseness, with colic pains. These affections of the alimentary canal are often attended with all the symptoms of hypochondriasis, such as dejection of mind, a constant and anxious attention to the slightest feelings, an imaginary aggravation of these, and an apprehension of danger from them.

In the same atonic gout, the viscera of the thorax also are sometimes affected, and palpitations, faintings, and asthma, occur.

In the head also occur headaches, giddiness, apoplectic and paralytic affections.

When the several symptoms now mentioned occur in habits having the marks of a gouty disposition, this may be suspected to have laid the foundation of them; and especially when either, in such habits, a manifest tendency to the inflammatory affection has formerly appeared, or when the symptoms mentioned are intermixed with and are relieved by some degree of the inflammatory gout. In such cases there can be no doubt of considering the whole as a state of the gout.

Another state of the disease we name the *retrocedent* gout. This occurs when an inflammatory state of the joints has, in the usual manner, come on, but without arising to the ordinary degree of pain and inflammation; or at least without these continuing for the usual time, or without their receding gradually in the usual manner; these affections of the joints suddenly and entirely cease, while some internal part becomes affected. The internal part most commonly attacked is the stomach; which then is affected with anxiety, sickness, vomiting, or violent pain: but sometimes the internal part is the heart, which gives occasion to a syncope; sometimes it is the lungs, which are affected with asthma; and sometimes it is the head, giving occasion to apoplexy or palsy. In all these cases there can be no doubt that the symptoms are all a part of the same disease, however different the affection may seem to be in the parts which it attacks.

The third state of irregular gout, which we name the *misplaced*, is when the gouty diathesis, instead of producing the inflammatory affection of the joints, produces an inflammatory affection of some internal part, and which appears from the same symptoms that attend the inflammations of those parts arising from other causes.

Whether the gouty diathesis does ever produce such inflammation of the internal parts without having first produced it in the joints, or whether the inflammation

Phlegma-
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of the internal part be always a translation from the joints previously affected, we dare not determine; but, even supposing the latter to be always the case, we think the difference of the affection of the internal part must still distinguish the *misplaced* from what we have named the *retrocedent* gout.

With regard to the misplaced gout, Dr Cullen, whom we here follow, tells us, that he never met with any cases of it in his practice, nor does he find any distinctly marked by practical writers, except that of a pneumonic inflammation.

There are two cases of a translated gout; the one of which is an affection of the neck of the bladder, producing pain, strangury, and a *catarrhus vesicæ*: the other is an affection of the rectum, sometimes indicated by pain alone in that part, and sometimes by hæmorrhoidal symptoms. In gouty persons such affections have been known to alternate with inflammatory affections of the joints; but whether these belong to the retrocedent or to the misplaced gout, our author pretends not to determine.

It is commonly supposed, that there are some cases of rheumatism which are scarcely to be distinguished from the gout: but these, Dr Cullen thinks, are but few; and that the two diseases may be for the most part distinguished with great certainty, by observing the predisposition, the antecedent circumstances, the parts affected, the recurrences of the disease, and its connection with the system; which circumstances, for the most part, appear very differently in the two diseases.

Causes, &c. The gout is generally an hereditary disease: but some persons, without any hereditary disposition, seem to acquire it; and in some an hereditary disposition may be counteracted from various causes. It attacks the male sex especially; but it sometimes, tho' more rarely, attacks also the female. The females liable to it are those of the more robust and full habits; and it very often happens to those before the menstrual evacuation hath ceased. Dr Cullen hath also found it occurring in several females whose menstrual evacuations were more abundant than usual.

The gout seldom attacks eunuchs; and when it does, seems to fall upon those who happen to be of a robust habit, to lead an indolent life, and to live very full. It attacks especially men of robust and large bodies, who have large heads, are of full and corpulent habits, and whose skins are covered with a thicker *rete mucosum*, which gives a coarser surface. To speak in the style of the ancient physicians, the gout will seldom be found to attack those of a sanguine, or such as are of a purely melancholic temperament; but very readily those of a *choleric-sanguine* temperament. It is, however, very difficult to treat this matter with precision. The gout seldom attacks persons employed in constant bodily labour, or those who live much upon vegetable aliment. It does not commonly attack men till after the age of 35; and generally not till a still later period. There are indeed instances of the gout appearing more early; but these are few in comparison of the others. When the disease does appear early in life, it seems to be in those who have the hereditary disposition very strong, and to whom the remote causes hereafter mentioned have been applied in a very considerable degree.

As the gout is an hereditary disease, and affects men particularly of a certain habit, its remote causes may be considered as predisponent and occasional. The predisponent cause, as far as expressed by external appearances, has been already marked; and physicians have been very confident in assigning the occasional causes: but in a disease depending so much upon a predisposition, the assigning occasional causes must be uncertain; as in the predisposed the occasional causes may not always appear, and in persons not predisposed they may appear without effect; and this uncertainty must particularly affect the case of the gout.

The occasional causes of the disease seem to be of two kinds. First, those which induce a plethoric state of the body. Secondly, those which in plethoric habits, induce a state of debility. Of the first kind are a sedentary, indolent manner of life, and a full diet of animal-food. Of the second kind of occasional causes which induce debility are excess in venery; intemperance in the use of intoxicating liquors; indigestion, produced either by the quantity or quality of the aliments; much application to study or business, night-watching, excessive evacuations; the ceasing of usual labour; a sudden change from a very full to a very spare diet; the large use of acids and acescents; and lastly, cold applied to the lower extremities. The former seem to act by increasing the predisposition; the latter are commonly the exciting causes, both of the first attacks, and of the repetitions of the disease.

With respect to the proximate cause of the gout, it has generally been thought that it depends on a certain morbid matter always present in the body; and that this matter, by certain causes, thrown upon the joints or other parts, produces the several phenomena of the disease.

This doctrine, however ancient and generally received, appears to Dr Cullen to be very doubtful. For,

First, there is no direct evidence of any morbid matter being present in persons disposed to the gout. There are no experiments or observations which show that the blood or other humours of gouty persons are in any respect different from those of others. Previous to attacks of the gout, there appear no marks of any morbid state of the fluids; for the disease generally attacks those persons who have enjoyed the most perfect health, and appear to be in that state when the disease comes on. At a certain period of the disease, a peculiar matter indeed appears in gouty persons; but this, which does not appear in every instance, and which appears only after the disease has subsisted for a long time, seems manifestly to be the effect, not the cause, of the disease. Further, though there be certain acrids which, taken into the body, seem to excite the gout, it is probable that these acrids operate otherwise in exciting the disease, than by affording the material cause of it. In general, therefore, Dr Cullen thinks there is no proof of any morbid matter being the cause of the gout.

Secondly, the suppositions concerning the particular nature of the matter producing the gout, have been so various, and so contradictory, as to allow us to conclude, that there is truly no proof of the existence of

Phlegma-
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of any of them. With respect to many of these suppositions, they are so inconsistent with chemical philosophy, and with the laws of the animal œconomy, that they must be entirely rejected.

Thirdly, the supposition of a morbid matter as the cause, is not consistent with the phenomena of the disease, particularly with its frequent and sudden translations from one part to another.

Fourthly, the supposition is further rendered improbable by this, that, if a morbid matter did exist, its operation should be similar in the several parts which it attacks: whereas it seems to be very different, being stimulant, and exciting inflammation, in the joints; but sedative and destroying the tone in the stomach: which, upon the supposition of the same particular matter acting in both cases, is not to be explained by any difference in the part affected.

Fifthly, Some facts alledged in proof of a morbid matter, are not sufficiently confirmed; such as those which would prove the disease to be contagious. There is, however, no proper evidence of this, the facts given being not only few, but exceptionable, and the negative observations innumerable.

Sixthly, Some arguments brought in favour of a morbid matter are founded upon a mistaken explanation. The disease has been supposed to depend upon a morbid matter, because it is hereditary. But the inference is not just: for most hereditary diseases do not depend upon any morbid matter; but upon a particular conformation of the structure of the body transmitted from the parent to the offspring; and this last appears to be particularly the case in the gout. It may be also observed, that hereditary diseases depending upon a morbid matter, appear always much more early in life than the gout commonly does.

Seventhly, The supposition of a morbid matter being the cause of the gout, has been hitherto useless, as it has not suggested any successful method of cure. Particular theories of gout have often corrupted the practice, and have frequently led from those views which might have been useful, and from that practice which experience had approved. Further, though the supposition of a morbid matter has been generally received, it has been as generally neglected in practice. When the gout has affected the stomach, nobody thinks of correcting the matter supposed to be present there, but merely of restoring the tone of the moving fibres.

Eighthly, The supposition of a morbid matter is quite superfluous: for it explains nothing, without supposing that matter to produce a change in the state of the moving powers; and a change in the state of the moving powers, produced by other causes, explains every circumstance without the supposition of a morbid matter; and it may be observed, that many of the causes exciting the gout, do not operate upon the state of the fluids, but directly and solely upon that of the moving powers.

Lastly, Dr Cullen contends that the supposition of a morbid matter is superfluous; because, without that, the disease can be explained, he thinks, in a manner more consistent with its phenomena, with the laws of the animal œconomy, and with the method of cure which experience has approved. We now proceed to give this explanation; but, before enter-

ing upon it, we must premise some general observations which Dr Cullen states.

The first observation is, That the gout is a disease of the whole system, or depends upon a certain general conformation and state of the body, which manifestly appears from the facts above mentioned. But the general state of the system depends chiefly upon the state of its primary moving powers; and therefore the gout may be supposed to be an affection of these chiefly.

The second observation is, That the gout is manifestly an affection of the nervous system; in which the primary moving powers of the whole system are lodged. The occasional or exciting causes are almost all such as act directly upon the nerves and nervous system; and the greater part of the symptoms of the atonic or retrocedent gout are manifestly affections of the same system. This leads us to seek for an explanation of the whole of the disease, in the laws of the nervous system, and particularly in the changes which may happen in the balance of its several parts.

The third observation is, That the stomach, which has so universal a consent with the rest of the system, is the internal part that is the most frequently, and often very considerably, affected by the gout. The paroxysms of the disease are commonly preceded by an affection of the stomach; many of the exciting causes act first upon the stomach, and the symptoms of the atonic and retrocedent gout are most commonly and chiefly affections of the same organ. This observation leads us to remark, that there is a balance subsisting between the state of the internal and that of the external parts; and, in particular, that the state of the stomach is connected with that of the external parts, so that the state of tone in the one may be communicated to the other.

These observations being premised, Dr Cullen offers the following pathology of the gout.

In some persons there is a certain vigorous and plethoric state of the system, which at a certain period of life is liable to a loss of tone in the extremities. This is in some measure communicated to the whole system, but appears more especially in the functions of the stomach. When this loss of tone occurs while the energy of the brain still retains its vigour, the *vis medicatrix nature* is excited to restore the tone of the parts; and accomplishes it, by exciting an inflammatory affection in some part of the extremities. When this has subsisted for some days, the tone of the extremities and of the whole system is restored, and the patient returns to his ordinary state of health.

This is the course of things in the ordinary form of the disease, which we name the *regular gout*; but there are circumstances of the body, in which this course is interrupted or varied. Thus, when the atony has taken place, if the reaction do not succeed, the atony continues in the stomach, or perhaps in other internal parts; and produces that state which Dr Cullen, for reasons now obvious, named the *atonic gout*.

A second case of variation in the course of the gout is, when to the atony the reaction and inflammation have to a certain degree succeeded, but from causes either internal or external the tone of the extremities and perhaps of the whole system is weakened; so that the inflammatory state, before it had either proceeded to the degree, or continued for the time, requisite for restoring

Phlegma-
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restoring the tone of the system, suddenly and entirely ceases: whence the stomach, and other internal parts, relapse into the state of atony; and perhaps have that increased by the atony communicated from the extremities: all which appears in what has been termed the *retrocedent state of the gout*.

A third case of variation from the ordinary course of the gout, is, when to the atony, usually preceding, an inflammatory reaction fully succeeds, but has its usual determination to the joints by some circumstances prevented; and is therefore directed to some internal part, where it produces an inflammatory affection, and that state of things which we have named the *misplaced gout*.

Though this theory of Dr Cullen's be supported with much ingenuity, yet we may confidently venture to assert, that on this subject he has been less successful in establishing his own opinion, than in combating those of others; and this theory, as well as others formerly proposed, is liable to numerous and unsurmountable objections. According to the hypothesis, a vigorous and plethoric habit should in every case exist prior to the appearance of gout; which is by no means consistent with fact: nor is it true that a vigorous and plethoric habit is liable at a certain age to a loss of tone in the extremities; which is another necessary condition in the hypothesis. Loss of tone often occurs in the extremities without exerting any peculiar influence on the stomach; and why a loss of tone in the stomach should excite the *vis medicatrix nature*, to restore it by exciting an inflammatory affection in some part of the extremities, is very inconceivable. Were the hypothesis true, every dyspeptic patient should infallibly be affected with gout; which, however, is by no means the case. In short, every step in the theory is liable to unsurmountable objections; and it by no means, any more than former hypotheses, explains the phenomena of the disease, particularly what Dr Cullen has himself so accurately pointed out, the connection of gouty with calculous complaints.

A very ingenious work has lately been published by an anonymous author, entitled "a Treatise on Gravel and upon Gout;" in which the sources of each are investigated, and effectual means of preventing or removing these diseases recommended. In this treatise an attempt is made to prove, that both diseases depend upon a peculiar concreting acid, the acid of calculi, or the *lithic acid*, as it has been styled by some. He supposes this acid, constantly present to a certain degree in the circulating fluids, to be precipitated by the introduction of other acids; and in this manner he explains the influence of acid wines and other liquors, as claret, cyder, &c. inducing gout; for he considers the circumstance chiefly constituting the disease as being an inflammation in parts of which the functions have been interrupted by the redundant acid precipitated. Although this theory be supported with much ingenuity, yet it is also liable to many objections. The sudden attack of the affection; its sudden transition from one part of the body to another; the instant relief of one part when another comes to be affected; and the various anomalous forms which the disease puts on, having an exact resemblance to different affections; are altogether irreconcilable to the idea of its depending on any fixed obstruction at

No 205.

a particular part arising from concreting acid. Nor does the plan of prevention and cure which he proposes, and which consists chiefly in abstinence from acid and in the destruction of acid, by any means correspond in every particular to the best established facts respecting the treatment of gout; to which we next proceed.

Cure. In entering upon this, we must observe, in the first place, that a cure has been commonly thought impossible; and we acknowledge it to be very probable, that the gout, as a disease of the whole habit, and very often depending upon original conformation, cannot be cured by medicines, the effects of which are always very transitory, and seldom extend to the producing any considerable change of the whole habit.

It would perhaps have been happy for gouty persons if this opinion had been implicitly received by them; as it would have prevented their having been so often the dupes of self-interested pretenders, who have either amused them with inert medicines, or have rashly employed those of the most pernicious tendency. Dr Cullen, who has treated of the cure of the disease with great judgment, as he has done the theory with much ingenuity, is much disposed to believe the impossibility of a cure of the gout by medicines; and more certainly still inclined to think, that, whatever may be the possible power of medicines, yet no medicine for curing the gout has hitherto been found. Although almost every age has presented a new remedy, all hitherto offered have, very soon after, been either neglected as useless, or condemned as pernicious.

But, though unwilling to admit the power of medicines, yet he contends, that a great deal can be done towards the cure of the gout by a regimen: and he is firmly persuaded, that any man who, early in life, will enter upon the constant practice of bodily labour, and of abstinence from animal-food, will be preserved entirely from the disease.

Whether there be any other means of radically curing the gout, the Doctor is not ready to determine. There are histories of cases of the gout, in which it is said, that by great emotions of mind, by wounds, and by other accidents, the symptoms have been suddenly relieved, and never again returned; but how far these accidental cures might be imitated by art, or would succeed in other cases, is at least extremely uncertain.

The practices proper and necessary in the treatment of the gout, are to be considered under two heads: *First*, As they are to be employed in the intervals of paroxysms; or, *secondly*, As during the time of these. In the intervals of paroxysms, the indications are, to prevent altogether the return of paroxysms; or at least to render them less frequent, and more moderate. During the time of paroxysms, the indications are, to moderate the violence and shorten the duration of them as much as can be done with safety.

It has been already observed, that the gout may be entirely prevented by constant bodily exercise, and by a low diet; and Dr Cullen is of opinion, that this prevention may take place even in persons who have a hereditary disposition to the disease. Even when the disposition has discovered itself by several paroxysms of inflammatory gout, he is persuaded that labour and abstinence will absolutely prevent any returns of it for the

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lie the rest of life. These, therefore, are the means of answering the first indication to be pursued in the intervals of paroxysms.

Exercise in persons disposed to the gout, in Dr Cullen's opinion, has effect by answering two purposes: One of these is the strengthening of the tone of the extreme vessels; and the other, the guarding against a plethoric state. For the former, if exercise be employed early in life, and before intemperance has weakened the body, a very moderate degree of it will answer the purpose; and, for the latter, if abstinence be at the same time observed, little exercise will be necessary.

With respect to exercise, this in general is to be observed, that it should never be violent; for, if violent, it cannot be long continued, and must always endanger the bringing on an atony in proportion to the violence of the preceding exercise.

It is also to be observed, that the exercise of gestation, though considerable and constant, will not, if it be entirely without bodily exercise, answer the purpose in preventing the gout. For this end, therefore, the exercise must be in some measure that of the body; and must be moderate, but at the same time constant and continued through life.

In every case and circumstance of the gout in which the patient retains the use of his limbs, bodily exercise, in the intervals of paroxysms, will be always useful; and in the beginning of the disease, when the disposition to it is not yet strong, exercise may prevent a paroxysm which otherwise might have come on. In more advanced states of the disease, however, when there is some disposition to a paroxysm, much walking will bring it on; either as it weakens the tone of the lower extremities, or as it excites an inflammatory disposition in them; and thus it seems to be that strains or contusions often bring on a paroxysm of the gout.

Abstinence, the other part of the proper regimen for preventing the gout, is of more difficult application. If an abstinence from animal food be entered upon early in life, while the vigour of the system is yet entire, Dr Cullen has no doubt of its being both safe and effectual: but if the motive for this diet shall not have occurred till the constitution has been broken by intemperance, or by the decline of life, a low diet may then endanger the bringing on an atonic state.

Further, if a low diet be entered upon only in the decline of life, and be at the same time a very great change from the former manner of living, the withdrawing of an accustomed stimulus of the system may readily throw this into an atonic state.

The safety of an abstemious course may be greater or less according to the management of it. It is animal food which especially disposes to the plethoric and inflammatory state, and that food is to be therefore especially avoided; but, on the other hand, vegetable aliment of the lowest quality is in danger of weakening the system too much by not affording sufficient nourishment, and more particularly of weakening the tone of the stomach by its acescency. It is therefore a diet of a middle nature that is to be chosen; and milk is precisely of this kind, as containing both animal and vegetable matter.

As approaching to the nature of milk, and as being a vegetable matter containing the greatest portion of

nourishment, the farinaceous seeds are next to be chosen, and are the food most proper to be joined with milk.

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With respect to drink, fermented liquors are useful only when they are joined with animal food, and that by their acescency; and their stimulus is only necessary from custom. When, therefore, animal food is to be avoided, fermented liquors are unnecessary; and by increasing the acescency of vegetables, these liquors may be hurtful. The stimulus of fermented or spirituous liquors is not necessary to the young and vigorous, and when much employed impairs the tone of the system. These liquors, therefore, are to be avoided, except so far as custom and the declining state of the system may have rendered them necessary. For preventing or moderating the regular gout, water is the only proper drink.

With respect to an abstemious course, it has been supposed, that an abstinence from animal food and fermented liquors, or the living upon milk and farinacea alone for the space of one year, might be sufficient for a radical cure of the gout: and it is possible that, at a certain period of life, in certain circumstances of the constitution, such a measure might answer the purpose. But this is very doubtful; and it is more probable, that the abstinence must, in a great measure, be continued, and the milk-diet be persisted in, for the remainder of life. It is well known, that several persons who had entered on an abstemious course, and had been thereby delivered from the gout, have, however, upon returning to their former manner of full living, had the disease return upon them with as much violence as before, or in a more irregular and more dangerous form.

It has been alleged, that, for preventing the return of the gout, blood-letting or scarifications of the feet, frequently repeated, and at stated times, may be practised with advantage; but of this Dr Cullen tells us he has had no experience; and the benefit of the practice is not, as far as we know, confirmed by the observation of any other practitioner.

Exercise and abstinence are the means of avoiding the plethoric state which gives the disposition to the gout; and are therefore the means proposed for preventing the paroxysms, or at least for rendering them less frequent and more moderate. But many circumstances prevent the steadiness necessary in pursuing these measures: and therefore, in such cases, unless great care be taken to avoid the exciting causes, the disease may frequently return; and, in many cases, the preventing of paroxysms is chiefly to be obtained by avoiding those exciting causes already enumerated.

A due attention in avoiding these different causes will certainly prevent fits of the gout; and the taking care that the exciting causes be never applied in a great degree, will certainly render fits more moderate when they do come on. But, upon the whole, it will appear, that a strict attention to the general conduct of life, is in this matter necessary; and therefore, when the predisposition has taken place, it will be extremely difficult to avoid the disease.

Dr Cullen is firmly persuaded, that, by obviating the predisposition, and by avoiding the exciting causes, the gout may be entirely prevented: but, as the mea-

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measures necessary for this purpose will, in most cases, be pursued with difficulty, and even with reluctance, men have been very desirous to find a medicine which might answer the purpose without any restraint on their manner of living. To gratify this desire, physicians have proposed, and, to take advantage of it, empirics have feigned, many remedies. Of what nature several of these remedies have been, it is difficult to say: but of those which are unknown, we conclude, from their having been only of temporary fame, and from their having soon fallen into neglect, that they have been either inert or pernicious, and therefore shall make no inquiry after them; and shall now remark only upon one or two known remedies for the gout which have been lately in vogue.

One of these is what has been named in England the *Portland powder*. This is not a new medicine, but is mentioned by Galen, and, with some little variation in its composition, has been mentioned by the writers of almost every age since that time. It appears to have been at times in fashion, and to have again fallen into neglect; and Dr Cullen thinks that this last has been owing to its having been found to be, in many instances, pernicious. In every instance which he has known of its exhibition for the length of time prescribed, the persons who had taken it were indeed afterwards free from any inflammatory affection of the joints; but they were affected with many symptoms of the atonic gout; and all, soon after finishing their course of the medicine, have been attacked with apoplexy, asthma, or dropsy, which proved fatal.

Another remedy which has had the appearance of preventing the gout, is an alkali in various forms; such as the fixed alkali, both mild and caustic, lime-water, soap, and absorbent earths; and of late the alkaline aerated water has been more fashionable than any other. Since it became common to exhibit these medicines in nephritic and calculous cases, it has often happened that they were given to those who were at the same time subject to the gout; and it has been observed, that under the use of these medicines, gouty persons have been longer free from the fits of their disease. That, however, the use of these medicines has entirely prevented the returns of gout, Dr Cullen does not know; because he never pushed the use of those medicines for a long time, being apprehensive that the long-continued use of them might produce a hurtful change in the state of the fluids.

As the preventing the gout depends very much on supporting the tone of the stomach, and avoiding indigestion; so costiveness, by occasioning this, is very hurtful to gouty persons. It is therefore necessary for such persons to prevent or remove costiveness, and by a laxative medicine, when needful; but it is at the same time proper, that the medicine employed should be such as may keep the belly regular, without much purging. Aloetics, rhubarb, magnesia alba, oleum ricini, or flowers of sulphur, may be employed, as the one or the other may happen to be best suited to particular persons.

These are the several measures to be pursued in the intervals of the paroxysms; and we are next to mention the measures proper during the time of them.

As during the time of paroxysms the body is in a

feverish state, no irritation should then be added to it; every part, therefore, of the antiphlogistic regimen, except the application of cold, ought to be strictly observed. Podagra.

Another exception to the general rule may occur when the tone of the stomach is weak, and when the patient has been before much accustomed to the use of strong drink; for then it may be allowable, and even necessary, to give some animal-food and a little wine.

That no irritation is to be added to the system during the paroxysms of gout, except in the cases mentioned, is agreed upon among physicians: but it is a more difficult matter to determine, whether, during the time of paroxysms, any measures may be pursued to moderate the violence of reaction and of inflammation. Dr Sydenham has given it as his opinion, that the more violent the inflammation and pain, the paroxysm will be the shorter, as well as the interval between the present and the next paroxysm longer; and, if this opinion be admitted as just, it will forbid the use of any remedies which might moderate the inflammation; which is, to a certain degree, undoubtedly necessary for the health of the body. On the other hand, acute pain presses for relief; and although a certain degree of inflammation may seem absolutely necessary, it is not certain but that a moderate degree of it may answer the purpose; and it is even probable, that in many cases the violence of inflammation may weaken the tone of the parts, and thereby invite a return of paroxysms. It seems to be in this way, that, as the disease advances, the paroxysms become more frequent.

From these last considerations, it seems probable, that, during the time of paroxysms, some measures may be taken to moderate the violence of the inflammation and pain, and particularly, that in first paroxysms, and in the young and vigorous, blood-letting at the arm may be practised with advantage: but this practice cannot be repeated often with safety; because blood-letting not only weakens the tone of the system, but may also contribute to produce plethora. However, bleeding by leeches on the foot, and upon the inflamed part, may be practised and repeated with greater safety; and instances have been known of its having been employed with safety to moderate and shorten paroxysms; but how far it may be carried, we have not had experience enough to determine.

Besides blood-letting and the antiphlogistic regimen, it has been proposed to employ remedies for moderating the inflammatory spasm of the part affected, such as warm bathing and emollient poultices. These have sometimes been employed with advantage and safety; but, at other times, have been found to give occasion to a retrocession of the gout.

Blistering is a very effectual means of relieving and discussing a paroxysm of the gout; but has also frequently had the effect of rendering it retrocedent. The flogging with nettles is analogous to blistering; and probably would be attended with the same danger. The burning with moxa, or other substances, is a remedy of the same kind; but though not found hurtful, there is no sufficient evidence of its proving a radical cure.

Camphire, and some aromatic oils, have the power of

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Podagra.

of allaying the pain, and of removing the inflammation from the part affected: but these remedies commonly make the inflammation only shift from one part to another, and therefore with the hazard of its falling upon a part where it may be more dangerous; and they have sometimes rendered the gout retrocedent.

From these reflections it will appear, that some danger must attend every external application to the parts affected during a paroxysm; and that therefore the common practice of committing the person to patience and flannel alone, is established upon the best foundation. Opiates give the most certain relief from pain; but, when given in the beginning of gouty paroxysms, it has by some been thought that they occasion these to return with greater violence. When, however, the paroxysms shall have abated in their violence, but still continue to return, so as to occasion painful and restless nights, opiates may be given with safety and advantage; especially in the case of persons advanced in life, and who have been often affected with the disease. When, after paroxysms have ceased, some swelling and stiffness still remain in the joints, these symptoms are to be discussed by the diligent use of the flesh-brush. Purging immediately after a paroxysm will be always employed with the hazard of bringing it on again.

Thus far of the *REGULAR* gout. We now proceed to consider the management of the disease when it has become *IRREGULAR*.

In the *atonic* gout, the cure is to be accomplished by carefully avoiding all debilitating causes; and by employing, at the same time, the means of strengthening the system in general, and the stomach in particular.

For strengthening the system in general, Dr Cullen recommends frequent exercise on horseback, and moderate walking. Cold bathing also may answer the purpose; and may be safely employed, if it appear to be powerful in stimulating the system, and be not applied when the extremities are threatened with any pain.

For supporting the tone of the system in general, when threatened with atonic gout, some animal food ought to be employed, and the more acescent vegetables ought to be avoided. In the same case, some wine also may be necessary; but it should be in moderate quantity, and of the least acescent kinds; and if every kind of wine shall be found to increase the acidity of the stomach, ardent spirits and water must be employed.

For strengthening the stomach, bitters and the Peruvian bark may be employed; but care must be taken that they be not constantly employed for any great length of time.

The most effectual medicine for strengthening the stomach is iron, which may be employed under various preparations; but the best appears to be the rust in fine powder, which may be given in large doses.

For supporting the tone of the stomach, aromatics may be employed; but should be used with caution, as the frequent and copious use of them have an opposite effect; and they should therefore be given only in compliance with former habits, or for palliating present symptoms.

When the stomach happens to be liable to indige-

stion, gentle vomits may be frequently given, and proper laxatives should be always employed to obviate or to remove costiveness.

In the atonic gout, or in persons liable to it, to guard against cold is especially necessary; and the most certain means of doing this, is by repairing to a warm climate during the winter season. In the more violent cases, blistering the lower extremities may be useful; but that remedy should be avoided when any pain threatens the extremities. In persons liable to the atonic gout, issues may be established in the extremities as in some measure a supplement to the disease.

A second case of the irregular gout, is the *retrocedent*.

When this affects the stomach and intestines, relief is to be instantly attempted by the free use of strong wines, joined with aromatics, and given warm; or, if these shall not prove powerful enough, ardent spirits must be employed, and are to be given in a large dose. In moderate attacks, ardent spirits, impregnated with garlic or with asafoetida, may be employed; or, even without the ardent spirits, a solution of asafoetida, with the volatile alkali, may answer the purpose. Opiates are often an effectual remedy; and may be joined with aromatics, as in the electuarius opiatum; or they may be usefully joined with volatile alkali and camphire. Musk has likewise proved useful in this disease.

When the affection of the stomach is accompanied with vomiting, this may be encouraged, by taking draughts of warm wine, at first with water, and afterwards without it; having at length recourse, if necessary, to some of the remedies above mentioned, and particularly the opiates.

In like manner, if the intestines be affected with diarrhoea, this is to be at first encouraged by taking plentifully of weak broth; and when this shall have been done sufficiently, the tumult is to be quieted by opiates.

When the retrocedent gout shall affect the lungs, and produce asthma, this is to be cured by opiates, by antispasmodics, and perhaps by blistering on the back or breast.

When the gout, leaving the extremities, shall affect the head, and produce pain, vertigo, apoplexy, or palsy, our resources are very precarious. The most probable means of relief is, blistering the head; and, if the gout shall have receded very entirely from the extremities, blisters may be applied to these also. Together with these blisterings, aromatics, and the volatile alkali, may be thrown into the stomach.

The third case of the irregular gout is the *misplaced*; that is, when the inflammatory affection of the gout, instead of falling upon the extremities, falls upon some internal part. In this case, the disease is to be treated by blood-letting, and by such other remedies as would be proper in an idiopathic inflammation of the same parts.

Whether the translation so frequently made from the extremities to the kidneys, is to be considered as an instance of the misplaced gout, seems uncertain: but Dr Cullen is disposed to think it something different; and therefore is of opinion, that, in the *nephralgia calculosa* produced upon this occasion, the remedies of inflammation are to be employed no farther than they

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may be otherwise sometimes necessary in that disease, arising from other causes than the gout.

To this dissertation on the gout, taken from the works of our late learned professor, we cannot help subjoining a very uncommon case published by Dr Samuel Pye in the London Medical Transactions, where the gout would seem to have been occasioned by a morbid matter, and to have been cured by the evacuation of it.

"Mr Major Rook, surgeon and apothecary in Upper Shadwell, of about 45 years of age, a sober, temperate man, of a good habit of body, accustomed to no disease but the gout; the returns of the fits whereof had never been more frequent than once in 12 or 14 months, about the month of June 1752 was seized with a very severe paroxysm of the gout. As I had known some extraordinary effects proceeding from a vegetable diet in that distemper, particularly in one gentleman, who, by a total abstinence from all manner of food except cow's milk, and that without bread, had cured himself of this disease; and who, at the time I mentioned the case to my friend, was in the 13th year of his milk-diet; I persuaded Mr Rook to try what vegetables would do for him: he readily complied, and entered upon it immediately, with a resolution, that, if it answered his expectation, he would renounce fish and flesh for ever.

"But after the most religious abstinence from animal food of every kind for eleven weeks, being visited by a gentle attack in both feet, he returned immediately to his animal food. This paroxysm continued but 48 hours; but in March 1753 was succeeded by a very severe one in both feet.

"The pain in his feet, heels, and ankles, increased with great violence for about 10 or 12 days; till at length he was in the most extreme agonies; such as he had never felt before, and such as almost made him mad. In the height of this extremity, the pains (it is his own expression) from the feet, heels, and ankles, flew as quick as lightning directly to the calves of his legs; but remaining there not half a minute, and not in the least abating of their extreme violence (though the feet, heels, and ankles, were left entirely free from pain), from the calves, after a short stay of about half a minute, the pains ascended with the same velocity as before to both the thighs, at the same time leaving the calves of the legs free from pain: from the thighs, in less than the space of one minute, and as quick as before, they arrived at the abdomen; and after giving the patient one most severe twitch in the bowels, they reached the stomach: here the pains and here the fit ended, upon the patient's vomiting up about a pint and a half of a green aqueous liquor, but so extremely corrosive, that he compared it to the strongest mineral acid.

"This extraordinary crisis happened at about two in the morning: immediately after this discharge he fell asleep, and slept till seven or eight, and waked perfectly easy in every part, no signs of the distemper remaining but the swelling and tenderness of his feet; both of which went off gradually, so that in two days he was able to walk about his business.

"The next fit seized him in February 1754, in the common way; but was less violent than the former, and continued for about six weeks; during which time

he had three increased paroxysms, or distinct smart fits, which held him about two hours each; in the last of which he had the same critical discharge, by vomiting of the same corrosive matter, preceded by the same uncommon symptoms as in the fit of 1753. But mending every hour, he was able the very next day to walk, and attend his patients, with more ease than after the first mentioned fit; for the swelling abated much sooner, and in three days disappeared.

"I have said, that this last fit was attended with three distinct paroxysms, the last of which ended as above: yet to show the disposition of nature, in this case, to throw off the offending humour in this her new way, it is remarkable, that in the two first of these increased paroxysms of pain, the patient declared to me that he never had the least ease till he had vomited; but as there was no translocation of the pain before these vomitings, there was none of that corrosive matter to be discharged; nothing but the common contents of the stomach was to be seen. These vomitings, however, procured the patient some ease; but the fit of the gout went on till the third paroxysm was over, which ended as has been related.

"As the crisis in this case is uncommon, I must take notice of a symptom or two, which were no less extraordinary, in both these fits of the gout.

"A most profuse sweat attended the patient every morning during the whole course of the fits; which was so very offensive, and at the same time his breath so uncommonly stinking, that neither the patient himself, nor those who waited on him, were ever sensible of the like.

"His linen was tinged as with saffron; and his urine very high coloured, of almost as deep a red as claret: but, upon the critical vomitings, every one of these symptoms disappeared with the disease.

"On the 9th of December 1755, he was attacked again in one foot. The symptoms, however, were so very mild, that he took no notice of them to his family till the 12th: from that day the pain was aggravated, and the swelling greatly increased, by walking and riding in a coach. On the 17th it became extremely violent, particularly in the heel; when it instantaneously left the parts affected, and in the same manner and with equal velocity (as in the two former fits), it flew into the calves of his legs, thighs, and abdomen; and when it had reached the stomach, it caused him to vomit the same kind of corrosive acid as in the two former fits; and though the quantity was no more than a tea-spoonful, he became perfectly well in two days.

"The same symptoms of fetid urine, and offensive sweats, attended the patient in this short paroxysm as in those of 1753 and 1754; the sweat continued but two nights, and the urine fetid only 48 hours.

"As Mr Rook had experienced so great and happy effects from the former critical vomitings, he was greatly disappointed upon finding the quantity evacuated so very small; for which reason he immediately attempted to increase it, by drinking three pints of warm water (which was at hand), but in vain; for neither that, nor the use of his finger, could provoke to an evacuation, which was begun and finished by nature: for though the quantity evacuated was so very small, yet as it was equally corrosive, and produced the same effect,

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effect, the discharge must be accounted as truly critical as the others were.

"During the first of these fits, in the year 1752, a hard tumor had appeared on the side of the metatarsus near the middle of the right foot, which continued till after the third critical vomiting; when it was resolved, and totally disappeared, upon the discharge of a viscid matter like the white of an egg, with a few small chalk-stones from the end of the middle toe of the same foot. This discharge happened about four or five days before the patient was seized with a regular fit in April 1755. But it is to be remarked, that this last fit continued three or four weeks, and went off in the common way, without any of the critical discharges of vomiting, urine, or sweat; but left on one hand three, and on the other two, fingers loaded with chalk stones; with this peculiar symptom, that when the weather was cold those fingers were affected with a most exquisite pain, which was always removed by heat.

"But not long after this last mentioned fit, a large quantity of chalk-stones were extracted from the bottom of the left foot, near the ball of the great toe, and that from time to time for about three or four months. On the 19th of January 1756 (the wound occasioned by the chalk-stones being still open), he was seized with a fever, without any symptom of the gout: the fever went off on the third day, with the same kind of critical sweat and urine as always accompanied the acid vomitings in the fore mentioned fits. On the fourth day from the attack of the fever, a fit of the gout came on, with the common symptoms, in both feet; which continued with violence for about a week, with frequent retching and vomiting, but without bringing up more than the common contents of the stomach. At this time an uncommon itching in the bottom of the foot and ball of the great toe from whence the chalk-stones had been extracted, tormented the patient for five or six hours; upon his gently rubbing the part, he was very sensible of a fluctuation of some matter, which soon appeared to flow at first in small quantities from the open orifice in the ball of the toe: upon pressing the part; about a tea-cup full of a liquid chalky matter was collected. The next morning the patient made a large opening with an imposthume knife, which produced more than half a pint of a bloody serous matter, full of chalk stones, which proved as truly critical as the vomitings of the corrosive acid did in the cases above mentioned; for the orifice from whence the chalk stones first issued, was very soon healed, and the gentleman continues in perfect health."

216

GENUS XXV. ARTHROPUOSIS.

Lumbago psoadica, *Sauv.* sp. 6. *Fordyce*, Practice of Physic, P. II. p. 70.

Lumbago apoftematosa, *Sauv.* sp. 12.

Lumbago ab arthrocace, *Sauv.* sp. 17.

Ischias ex abscessu, *Sauv.* sp. 6.

Morbus coxarius, *De Haen*, Rat. Med. Vol. I. c. xxxii.

THIS is a disease very much resembling the rheumatism; but differing both from it and the gout, in that it occasions suppurations, which they seldom or never

do. It frequently, according to Sauvages, attacks the Arthropuosis muscle; and occasions excruciating pains, and then collections of matter.

The only cure is, if suppuration cannot be prevented, to lay open the part where the matter is contained, which would otherwise be absorbed, and occasion a fatal hectic.

ORDER III. EXANTHEMATA.

217

Exanthemata, *Sag.* Class X.

Phlegmasiæ exanthematicæ, *Sauv.* Class III. Ord. I.

Morbi exanthematici, *Lin.* Class I. Ord. II.

Febres exanthematicæ, *Vog.* Class I. Ord. II.

GENUS XXVI. ERYSIPELAS.

218

St ANTHONY'S FIRE.

Erysipelas *Sauv.* gen. 97. *Lin.* 10. *Sag.* gen. 296.

Febris erysipelacea, *Vog.* 68. *Hoffm.* II. 98.

Sp. I. ERYSIPELAS with Blisters.

219

Erysipelas rosa, *Sauv.* sp. 1. *Sennert de febr.* lib. ii. c. 15.

Febris erysipelatosa, *Sydenham*, sect. vi. cap. 5.

Erysipelas typhodes, *Sauv.* sp. 2.

Erysipelas pestilens, *Sauv.* sp. 5.

Erysipelas contagiosum, *Sauv.* sp. 9.

Description. The erysipelas of the face, where this affection very frequently appears, comes on with a cold shivering, and other symptoms of pyrexia. The hot stage of this is frequently attended with a confusion of the head, and some degree of delirium; and almost always with drowsiness, and perhaps coma. The pulse is always frequent, and commonly full and hard.—When these symptoms have continued for one, two, or at most three days, an erythema appears on some part of the face. This at first is of no great extent; but gradually spreads from the part it first occupied to the other parts of the face, till it has affected the whole; and frequently from the face it spreads over the hairy scalp, or descends on some part of the cheek. As the redness spreads, it commonly leaves, or at least is abated in the parts it had before occupied. All the parts which the redness affects are also affected with some swelling, which continues for some time after the redness has abated. The whole face becomes considerably turgid; and the eye-lids are often so much swelled as entirely to shut up the eyes. When the redness and swelling have continued for some time, there commonly arise, sooner or later, blisters of a larger or smaller size on several parts of the face. These contain a thin colourless liquor, which sooner or later runs out. The surface of the skin, in the blistered places, sometimes becomes livid and blackish; but this seldom goes deeper, or discovers any degree of gangrene affecting the skin. On the parts of the face not affected with blisters, the cuticle suffers, towards the end of the disease, a considerable desquamation. Sometimes the tumor of the eye-lids ends in a suppuration.

The inflammation coming upon the face does not produce any remission of the fever which had before prevailed; and sometimes the fever increases with the spreading and increasing inflammation. The inflammation

Exanthemata.

tion commonly continues for eight or ten days; and, for the same time, the fever and symptoms attending it also continue. In the progress of the disease, the delirium and coma attending it sometimes go on increasing, and the patient dies apoplectic on the seventh, ninth, or eleventh day of the disease. In such cases it has been commonly supposed, that the disease is translated from the external to the internal parts. But Dr Cullen thinks that the affection of the brain is merely a communication from the external affection, as this continues increasing at the same time with the internal. When the fatal event does not take place, the inflammation, after having affected the whole face, and perhaps the other external parts of the head, ceases, and with that the fever also; and, without any other crisis, the patient returns to his ordinary health. This disease is not commonly contagious; but as it may arise from an acrid matter externally applied, so it is possible that the disease may sometimes be communicated from one person to another. Persons who have once laboured under this disease are liable to returns of it.

Prognosis. The event of this disease may be foreseen from the state of the symptoms which denote more or less the affection of the brain. If neither delirium nor coma come on, the disease is seldom attended with any danger; but when these symptoms appear early in the disease, and are in a considerable degree, the utmost danger is to be apprehended.

Cure. The erysipelas of the face is to be cured, according to the opinion of most practitioners, much in the same manner as phlegmonic inflammations; by blood-letting, cooling purgatives, and by employing every part of the antiphlogistic regimen. Many observations, however, would lead us to conclude, that in not a few cases the concomitant fever has here a tendency to the typhoid type; and therefore evacuations apparently serviceable in the first instance have afterwards a bad effect. The evacuations of blood-letting and purging are to be employed more or less according to the urgency of symptoms; particularly those which mark an affection of the brain. As the pyrexia continues, and often increases with the inflammation of the face, so the evacuations above-mentioned are to be employed at any time of the disease. When, however, the fever, in place of marks of the phlogistic diathesis, particularly a full, hard, and strong pulse, is attended with symptoms of great debility, and with a small pulse easily compressible; evacuations, particularly under the form of blood-letting, must be used with very great caution. Even in such cases, however, the use of refrigerant cathartics may still be persisted in with more safety and greater advantage. But whether evacuants have been employed or not, when symptoms of debility run to a great height, and marks of a putrescent tendency appear, recourse must be had to wine and the Peruvian bark. In cases which at the commencement require evacuation, these are often in the after periods employed with very great benefit.

In this, as in other diseases of the head, when that part happens to be the seat of erysipelas, it is proper to put the patient, as often as he can easily bear it, into somewhat of an erect posture; and as in

this disease there is always an external affection, so Erysipelas. various external applications have been proposed to be made to the part affected; but almost all of them are of doubtful effect.

An erysipelas frequently appears on other parts of the body besides the face, and such other erysipelatous inflammations frequently end in suppuration; but these cases are seldom dangerous. At coming on they are sometimes attended with drowsiness, and even with some delirium; but this seldom happens, and these symptoms do not continue after the inflammation is formed; and Dr Cullen does not remember to have seen an instance of the translation of an inflammation from the limbs to an internal part; and though these inflammations of the limbs be attended with pyrexia, they seldom require the same evacuations as the erysipelas of the face.

Sp. II. ERYSIPELAS with *Phlyctenæ*.

220

Erysipelas zostër, *Sauv.* sp. 8.

Zona; Anglis, *The SHINGLES*, *Ruffel* de tab. gland. p. 124. *Hist.* 35.

Herpes zostër, *Sauv.* sp. 9.

THIS differs from the former in no other way than in being attended with an eruption of phlyctenæ or small watery bladders on several parts of the body.—The method of cure is the same.

GEN. XXVII. PESTIS, the PLAGUE.

221

Pestis, *Sauv.* gen. 91. *Lin.* 2. *Junck.* 78.

Febris pestilentialis, *Vog.* 33. *Hoffm.* II. 93.

Pestis benigna, *Sauv.* sp. 2. Pestis Massiliensis, Class III. *Traité de la peste*, p. 41. *Ejusdem* pestis, Cl. 5to *Traité*, p. 228.

Pestis remittens, *Sauv.* sp. 9.

Pestis vulgaris, *Sauv.* sp. 1. Pestis Massil. Cl. ii. *Traité*, p. 38. *Ejusd.* Cl. iii. & iv. *Traité*, p. 225, &c. *Waldschmidt.* de peste Holsatica, apud *Halleri* Diss. Pract. tom. v. *Chenot.* de peste Transylvanica, 1755, 1759, *De Haen*, Rat. Med. pars xiv.

Pestis Egyptiaca, *Sauv.* sp. 11. *Alpin.* de Med. Egypt.

Pestis interna, *Sauv.* sp. 3. Pest. Massil. Cl. I. *Traité*, p. 37—224.

History. Of this distemper Dr Cullen declines giving any particular history, because he never saw it; from the accounts of other authors, however, he is of opinion, that the circumstances peculiarly characteristic of it, especially of its more violent and dangerous states, are, 1. The great loss of strength in the animal functions, which often appears early in the disease. 2. The stupor, giddiness, and consequent staggering, which resembles drunkenness, or the head-ach and various delirium, all of them denoting a great disorder in the functions of the brain. 3. Anxiety, palpitation, syncope, and especially the weakness and irregularity of the pulse, denoting a considerable disturbance in the action of the heart. 4. Nausea and vomiting, particularly the vomiting of bile, which shows an accumulation of vitiated bile in the gall-bladder and biliary ducts, and from thence derived into the intestines and stomach; and which denote a considerable spasm, and loss of tone in the extreme vessels on the surface

Exanthemata

surface of the body. 5. The buboes and carbuncles, which denote an acrimony prevailing in the fluids; and, lastly, The petechiæ, hæmorrhages, and colliquative diarrhœa, which denote a putrescent tendency prevailing in a great degree in the mass of blood.

To these characteristics of the plague enumerated by Dr Cullen, we shall add one mentioned by Sir John Pringle, which, though perhaps less frequent than the others, yet seems worthy of notice. It is this, That in the plague there is an extraordinary enlargement of the heart and liver. In nine dissections of bodies dead of the plague at Marseilles, this extraordinary enlargement of the heart is taken notice of in all of them, and of the liver in seven of them. The account was sent to the Royal Society by M. Didier, one of the physicians to the king of France, and has been published in the Philosophical Transactions. In the first case, the author takes notice, that "the heart was of an extraordinary bigness; and the liver was of double the natural size.—Case 2. The heart was of a prodigious bigness, and the liver much enlarged.—Case 3. The heart double the natural bigness.—Case 4. The heart was very large, and the liver was bigger and harder than ordinary.—Case 5. The heart was of a prodigious bigness.—Case 6. The heart was larger than in its natural state; the liver also was very large.—Case 7. The heart was of a prodigious size, and the liver was very large.—Case 8. The heart was much larger than natural, and the liver of a prodigious size.—Case 9. The heart was double the natural bigness, and the liver was larger than ordinary."—This preternatural enlargement Dr Pringle thinks is owing to the relaxation of the solid parts, by which means they become unable to resist the impetus of blood, and therefore are easily extended; as in the case of infancy, where the growth is remarkably quick. And a similar enlargement he takes notice of in the scurvy, and other putrid diseases.

A very elaborate work has lately been published on the subject of the plague by Dr Patrick Russel, formerly physician to the British factory at Aleppo. In this work, a very full history is given of the various forms and varieties of the disease. He makes particular observations on the following symptoms, which, in addition to the pestilential eruptions, he considers as the most important concomitants of plague, viz. fever, delirium, coma, impediment or loss of speech, deafness, mudiness of the eyes, white tongue, state of the pulse, respiration, anxiety, pain at the heart, inquietude, debility, fainting, convulsion, appearances of the urine, perspiration, vomiting, looseness, and hæmorrhagy; and he concludes these remarks with some observations on the occurrence of the plague with pregnant women. To point out more distinctly the stable varieties of the disease, he arranges the pestilential cases which fell under his observation at Aleppo under six classes: and he concludes his description with a very minute and particular account of the pestilential eruptions, appearing under the form either of buboes, carbuncles, or other exanthemata. The presence of the two first, he observes, either separately or conjunctly, leaves the nature of the distemper unequivocal. But fatal has been the error of rashly pronouncing a distemper not to be a plague from their ab-

sence. Buboes affected the inguinal, axillary, parotid, maxillary, and cervical glands. But the first were the most commonly affected, and the two latter seldom observed to swell, without either the parotid swelling at the time or soon after. Of the carbuncles, Dr Russel describes five different varieties. The other exanthemata, which he observed sometimes, though less frequently, attending the plague, were petechiæ, a marbled appearance of the skin, an erysipelatous redness, streaks of a reddish purple or livid colour, vibices or weals, and large blue or purple spots, the *macule magna* of authors. In some cases, an extraordinary concurrence of eruptions took place, which was chiefly observed among children under 10 years of age.

Causes, &c. From a consideration of the symptoms above-mentioned, Dr Cullen concludes, that the plague is owing to a specific contagion, often suddenly producing the most considerable debility in the nervous system or moving powers, and a general putrescency in the fluids. Dr Russel also considers the disease as being universally the consequence of what may be called *pestilential contagion*; and has judiciously repelled the objections which have been brought against this doctrine.

Prevention. Here we must refer to all those methods of preventing and removing the incipient contagion of putrid fevers, which have been so fully enumerated. Dr Cullen is persuaded that the disease never arises in the northern parts of Europe, but in consequence of being imported from some other country. The magistrate's first care therefore ought to be to prevent the importation; and this may generally be done by a due attention to bills of health, and to the proper performance of quarantines.—With respect to the latter, he is of opinion, that the quarantines of persons may with safety be much less than 40 days; and if this were allowed, the execution of the quarantine would be more exact and certain, as the temptation to break it would be in a great measure avoided. With respect to the quarantine of goods, it cannot be perfect unless the suspected goods be unpacked, duly ventilated, and other means be employed for correcting the infection they may carry; and if all this be properly done, it is probable that the time commonly prescribed for quarantine may be also shortened.

A second measure in the way of prevention is required, when an infection has reached and prevailed in any place, to prevent that infection from spreading into others. This can only be done by preventing the inhabitants or the goods of any infected place from going out of it till they have undergone a proper quarantine.

The third measure, and which ought to be employed with great care, is, to prevent the infection from spreading among the inhabitants of a place in which it has arisen. And in this case, a great deal may be done by the magistrate, 1. By allowing as many of the inhabitants as are free from infection, and are not necessary to the service of the place, to go out of it. 2. By discharging all assemblies, or unnecessary intercourse of the people. 3. By ordering some necessary communications to be performed without contact. 4. By making such arrangements and provisions

Pestis.

Exanthemata

visions as may render it easy for the families remaining to shut themselves up in their own houses. 5 By allowing persons to quit houses where an infection appears, upon condition that they go into lazarettoes. 6. By ventilating and purifying, or destroying, at the public expence, all infected goods. 7. By avoiding hospitals, and providing separate apartments for infected persons.

The fourth and last part of the business of prevention respects the conduct of persons necessarily remaining in infected places, especially those obliged to have some communication with persons infected. Those obliged to remain in places infected, but not to have any near communication with the sick, must avoid all near communication with other persons or their goods; and it is probable, that a small distance will serve, if, at the same time, there be no stream of air to carry the effluvia of persons or goods to some distance. Those who are obliged to have a near communication with the sick ought to avoid any of the debilitating causes which render the body susceptible of infection, as a spare diet, intemperance in drinking, excess in venery, cold, fear, or other depressing passions of the mind. A full diet of animal-food is also to be avoided, because it increases the irritability of the body, and favours the operation of contagion; and indigestion, whether from the quantity or quality of the food, contributes very much to the same.

Besides these, it is probable that the moderate use of wine and spirituous liquors, moderate exercise, and the cold bath, may be of use; tonic medicines also, of which the Peruvian bark is deservedly accounted the chief, may likewise be used with some probability of success. If any thing is to be expected from antiseptics, Dr Cullen thinks camphor preferable to any other. In general, however, every one is to be indulged in the medicine of which he has the best opinion, provided it is not evidently hurtful. Whether issues be useful in preserving from the effects of contagion, is a matter of doubt. Dr Russel in his treatise enters very fully into the consideration of the means of prevention, both with respect to quarantines, lazarettoes, and bills of health. He is of opinion, that the present laws on these subjects are in many respects defective: and he thinks, that a set of new regulations would have the best chance of a deliberate and impartial discussion in the senate, if the inquiry were taken at a time free from all apprehension of immediate danger.

Cure. Here, according to Dr Cullen, the indications are the same as in fever in general, but are not all equally important. The measures for moderating the violence of reaction, which operate by diminishing the action of the heart and arteries, have seldom, he thinks, any place here, excepting that the antiphlogistic regimen is generally proper. Some physicians have recommended bleeding, and Sydenham even seems to think it an effectual cure; but Dr Cullen supposes, that for the most part it is unnecessary, and in many cases might do much hurt. Dr Russel, however, who on this subject speaks from experience and actual observation, is of a different opinion. With most of his patients, a single bleeding was employed with advantage; and even where the sick under his inspection were bled oftener than once, he did not find that the low state was thereby hurried on. Purging has

N^o 205.

also been recommended; and in some degree it may be useful in drawing off the putrescent matter frequently present in the intestines; but a large evacuation this way may certainly be hurtful.

The moderating the violence of reaction, as far as it can be done, by taking off the spasm of the extreme vessels, is a measure, in Dr Cullen's opinion, of the utmost necessity in the cure of the plague; and the whole of the means formerly mentioned, as suited to this indication, are extremely proper. The giving an emetic, at the first approach of the disease, would probably be of great service; and it is probable, that, at some other periods of the disease, emetics might be useful, both by evacuating bile abounding in the alimentary canal, and by taking off the spasm of the extreme vessels. Indeed Baron Ash, and some other of the Russian practitioners, represent the early and repeated use of emetics as the only effectual mode of cure.

From some principles with respect to fever in general, and with respect to the plague in particular, Dr Cullen is of opinion, that after the exhibition of the first vomit, the body should be disposed to sweat; but this sweat should be raised only to a moderate degree, though it must be continued for 24 hours or more if the patient bears it easily. The sweating is to be excited and conducted according to the rules laid down under *SYNOCHA*; and must be promoted by the plentiful use of diluents rendered more grateful by vegetable acids, or more powerful by being impregnated with some portion of neutral salts. To support the patient under the continuance of the sweat, a little weak broth, acidulated with the juice of lemons, may be given frequently, and sometimes a little wine if the heat of the body be not considerable. If sudorific medicines are judged necessary, opiates will be found most effectual and safe; but they should not be combined with aromatics, and probably may be more effectual if joined with a portion of emetics and of neutral salts. But if, notwithstanding the use of emetics and sudorifics in the beginning, the disease should still continue, the cure must turn upon the use of means for obviating debility and putrescency; and for this purpose tonic medicines, especially the Peruvian bark, and cold drink, are the most proper. For the treatment of buboes and carbuncles, see the article *SURGERY*.

GENUS XXVIII. VARIOLA.

The SMALL-POX.

222

Variola, *Sauv.* gen. 92. *Lin.* 3. *Sag.* gen. 290.Febris variolosa, *Vog.* 35. *Hoffm.* II. 49.Variolæ, *Boerh.* 1371. *Junck.* 76.Sp. I. *The Distinct SMALL-POX.*

223

Variola discreta benigna, *Sauv.* sp. 2.Variolæ regulares discretæ, *Sydenh.* sect. iii. cap. 2.Variolæ discretæ simplices, *Helvet.* Ob. sp. 1.Variola discreta complicata, *Sauv.* sp. 2. *Helvet.* sp. 2.Variolæ anomalæ, *Sydenh.* sect. iv. cap. 6.Variola discreta dysenteriodes, *Sauv.* sp. 4. *Sydenh.* sect. iv. cap. 1.Variola discreta vesicularis, *Sauv.* sp. 5.Variola discreta crystallina. *Mead de variol* cap. 2.

Variola

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mata

- Variola discreta verrucosa, *Sauv.* sp. 6. *Mead*
ibid.
Variola discreta filiquosa, *Sauv.* sp. 7. *Freind*
Oper. p. 358.
Variola discreta miliaris, *Sauv.* sp. 8. *Helvet.* Obf.
sp. 3.

224

Sp. II. *The Confluent SMALL-POX.*

- Variola confluens, *Sauv.* sp. 9.
Variolæ regulares confluentes, ann. 1667. *Syden-*
ham, sect. iii. cap. 2.
Variolæ confluentes simplices, *Helvet.* Obf. sp. 1.
Variola confluens crystallina, *Sauv.* sp. 10.
Variola japonica, *Kempfer.*
Vesiculæ divæ Barbaræ, *C. Pis.* Obf. 149.
Variola confluens maligna, *Helvet.* Obf. sp. 1.
Variola confluens cohærens, *Sauv.* sp. 11.
Variola confluens maligna, *Helvet.* sp. 2.
Variola confluens nigra, *Sauv.* sp. 12. *Sydenham*,
sect. v. cap. 4.
Variola confluens maligna, *Helvet.* sp. 3.
Variola sanguinea, *Mead* de variolis, cap. 2.
Variola confluens corymbosa, *Sauv.* sp. 13.
Variola confluens maligna, *Helvet.* sp. 4.

Description. In the distinct small-pox, the disease begins with a synocha or inflammatory fever. It generally comes on about mid-day, with some symptoms of a cold stage, and commonly with a considerable languor and drowsiness. A hot stage is soon formed, and becomes more considerable on the second and third day. During this course children are liable to frequent startings from their slumbers; and adults, if they are kept in bed, are disposed to much sweating. On the third day, children are sometimes affected with one or two epileptic fits. Towards the end of the third day the eruption commonly appears, and gradually increases during the fourth; appearing first on the face, and successively on the inferior parts, so as to be completed over the whole body on the fifth day. From the third day the fever abates, and against the fifth it entirely ceases. The eruption appears first in small red spots hardly eminent, but by degrees rising into pimples. There are generally but few on the face; but, even when more numerous, they are separate and distinct from one another. On the fifth or sixth day, a small vesicle, containing an almost colourless fluid, appears on the top of each pimple. For two days these vesicles increase in breadth only, and there is a small hollow pit in their middle, so that they are not raised into spheroidal pustules till the eighth day. These pustules from their first formation continue to be surrounded with an exactly circular inflamed margin, which when they are numerous diffuses some inflammation over the neighbouring skin, so as to give somewhat of a damask-rose colour to the spaces between the pustules. As the pustules increase in size, the face swells considerably if they are numerous on it; and the eye-lids particularly are so much swelled, that the eyes are entirely shut. As the disease proceeds, the matter in the pustules becomes by degrees more opaque and white, and at length assumes a yellowish colour. On the 11th day the swelling of the face is abated, and the pustules seem quite full. On the top of each a darker spot appears; and at this

Vol. XI. Part I.

place the pustule, on the 11th day, or soon after, is spontaneously broken, and a portion of the matter oozes out; in consequence of which the pustule is shrivelled, and subsides; while the matter oozing out dries, and forms a crust upon its surface. Sometimes only a little of the matter oozes out, and what remains in the pustule becomes thick and even hard. After some days, both the crusts and the hardened pustules fall off, leaving the skin which they covered of a brownish red colour; nor doth it resume its natural colour till many days after. In some cases, where the matter of the pustules has been more liquid, the crusts formed from it are later in falling off, and the part they covered suffers some desquamation, which occasions a small hollow or pit in it.

On the legs and hands the matter is frequently absorbed; so that at the height of the disease, these pustules appear as empty as vesicles. On the 10th and 11th days, as the swelling of the face subsides, a swelling arises in the hands and feet; but which again subsides as the pustules come to maturity. When the pustules on the face are numerous, some degree of pyrexia appears on the 10th and 11th days; but disappears again after the pustules are fully ripened, or perhaps remains in a very slight degree till the pustules on the feet have finished their course; and it is seldom that any fever continues longer in the distinct small-pox. When the pustules are numerous on the face, upon the sixth or seventh day some uneasiness of the throat, with a hoarseness of the voice, comes on, and a thin liquid is poured out from the mouth. These symptoms increase with the swelling of the face; and the liquids of the mouth and throat becoming thicker are with difficulty thrown out; and there is at the same time some difficulty in swallowing, so that liquids taken in to be swallowed are frequently rejected or thrown out by the nose. But all these affections of the fauces are abated as the swelling of the face subsides.

In the confluent small-pox all the symptoms above-mentioned are much more severe. The eruptive fever particularly is more violent; the pulse is more frequent and more contracted, approaching to that state of pulse which is observed in typhus. The coma is more considerable, and there is frequently a delirium. Vomiting also frequently attends, especially at the beginning of the disease. In very young infants epileptic fits are sometimes frequent on the first days of the disease, and sometimes prove fatal before any eruption appears, or they usher in a very confluent and putrid small-pox. But at the same time, it has been justly remarked by Dr Sydenham, and other accurate observers, that epileptic attacks more frequently preceded distinct and mild than malignant and confluent small-pox. The eruption appears in the confluent more early on the third day, and it is frequently preceded or accompanied with an erysipelatous efflorescence. Sometimes the eruption appears in clusters, like the measles. When the eruption is completed, the pimples are always more numerous upon the face, and at the same time smaller and less eminent. Upon the eruption the fever suffers some remission, but never goes off entirely; and after the fifth or sixth day it increases again, and continues to be considerable throughout the remaining part of the disease. The vesicles formed on

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Variola.

Exanthemata

the top of the pimples appear sooner; and while they increase in breadth, they do not retain a circular, but are every way of an irregular figure. Many of them run into one another, insomuch that very often the face is covered with one vesicle rather than with a number of pustules. The vesicles, as far as they are anyway separated, do not arise to a spheroidal form, but remain flat, and sometimes the whole of the face is of an even surface. When the pustules are in any measure separated, they are not bounded by an inflamed margin, but the part of the skin that is free from pustules is commonly pale and flaccid. The liquor that is in the pustules changes from a clear to an opaque appearance, and becomes whitish or brownish, but never acquires the yellow colour and thick consistence that appears in the distinct small-pox. The swelling of the face, which only sometimes attends the distinct small-pox, always attends the confluent kind; it also comes on more early, and arises to a greater height, but abates considerably on the tenth or eleventh day. At this time the pustules or vesicles break and shrivel; pouring out at the same time a liquor, which is formed into brown or black crusts, which do not fall off for a long time after. Those of the face, in falling off, leave the skin subject to a desquamation, which pretty certainly produces pittings. On the other parts of the body the pustules of the confluent small-pox are more distinct than on the face; but never acquire the same maturity and consistence of pus as in the properly distinct kind. The salivation, which sometimes only attends the distinct small-pox, very constantly attends the confluent; and both the salivation and the affection of the fauces above-mentioned are, especially in adults, in a higher degree. In infants a diarrhoea comes frequently in place of a salivation.

In this kind of small-pox there is often a very considerable putrescency of the fluids, as appears from petechiæ, from serous vesicles, under which the skin shows a disposition to gangrene, and from bloody urine or other hæmorrhages; all of which symptoms frequently attend this disease. In the confluent small-pox also, the fever, which had only suffered a remission from the eruption to the maturation, at or immediately after this period is frequently renewed again with considerable violence. This is what has been called the *secondary fever*, and is of various duration and event.

Causes, &c. It is evident that the small-pox is originally produced by a contagion; and that this contagion is a ferment with respect to the fluids of the human body, which assimilates a great part of them to its own nature; or, at least, we have every reason to believe that a small quantity of contagious matter introduced, is somehow multiplied and increased in the circulating fluids of the animal body. This quantity passes again out of the body, partly by insensible perspiration, and partly by being deposited in pustules. The causes which determine more of the variolous matter to pass by perspiration, or to form pustules, are probably certain circumstances of the skin, which determine more or less of the variolous matter to stick in it, or to pass freely through it. The circumstance of the skin, which seems to determine the variolous matter

to stick in it, is a certain state of inflammation depending much on the heat of it: thus we have many instances of parts of the body, from being more heated, having a greater number of pustules than other parts. Thus parts covered with plasters, especially those of the stimulant kind, have more pustules than others. — Certain circumstances also, such as adult age, and full living, determining to a phlogistic diathesis, seem to produce a greater number of pustules, and *vice versa*. It is therefore probable, that an inflammatory state of the whole system, and more particularly of the skin, gives occasion to a greater number of pustules; and the causes of this may produce most of the other circumstances of the confluent small-pox, such as the time of eruption, the continuance of the fever, the effusion of a more putrescent matter, and less fit to be converted into pus, together with the form and other circumstances of the pustules.

Prognosis. The more exactly the disease retains the form of the distinct kind, it is the safer; and the more completely the disease takes the form of the confluent kind, it is the more dangerous. It is only when the distinct kind shows a great number of pustules on the face or otherwise, by fever or putrescency, approaching to the circumstances of the confluent, that the distinct kind is attended with any danger.

In the confluent kind the danger is always very considerable; and the more violent and permanent the fever is, the greater the danger; and especially in proportion to the increase of the symptoms of putrescency. When the putrid disposition is very great, the disease sometimes proves fatal before the eighth day; but in most cases death happens on the eleventh, and sometimes not till the fourteenth or seventeenth day.

Though the small-pox may not prove immediately fatal, the more violent kinds are often followed by a morbid state of the body, sometimes of very dangerous event. These consequences, according to Dr Cullen, may be imputed sometimes to an acrid matter produced by the preceding disease, and deposited in different parts; and sometimes to an inflammatory diathesis produced and determined to particular parts of the body.

Cure. The art of medicine hath never yet afforded a method of preventing the eruption of the small-pox after the contagion is received; all that can be done is, to render the disease more mild, which is generally effected by INOCULATION. It is not to be supposed that the mere giving of the infection artificially could make any difference in the nature of the disease, was it not that certain precautions are commonly used in the case of those who are inoculated, which cannot be used in the case of those who receive them naturally — These measures, according to Dr Cullen, are chiefly the following.

1. The choosing for the subject of inoculation persons otherwise free from disease, and not liable from their age or otherwise to any incidental disease.
2. The choosing that time of life which is most favourable to a mild disease.
3. The choosing for the practice a season most favourable to a mild disease.

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Variola.

Exanthema

Variola.

4. The preparing the person to be inoculated, by enjoining abstinence from animal-food for some time before inoculation.

5. The preparing the person by courses of mercurial and antimonial medicines.

6. The taking care at the time of inoculation to avoid cold, intemperance, fear, or other circumstances which might aggravate the future disease.

7. After these preparations and precautions, the choosing a fit matter to be employed in inoculation, by taking it from a person of a sound constitution, and free from any disease, or suspicion of it; by taking it from a person who has had the small-pox of the most benign kind; and lastly, by taking the matter from such person as soon as it has appeared in the pustules, either on the part inoculated, or on other parts of the body.

8. The introducing, by inoculation, but a small portion of the contagious matter.

9. After inoculation, the continuing of vegetable diet, and the employment of mercurial and antimonial medicines, and at the same time employing frequent purging.

17. Both before and after inoculation, taking care to avoid external heat, either from the sun, artificial fires, warm chambers, much clothing, or being much in bed; and, on the contrary, exposing the person to a free and cool air.

11. Upon the appearance of the eruptive fever, the rendering that moderate by the employment of purgatives; by the use of cooling and antiseptic acids; and especially by exposing the person frequently to a cool, and even a cold air, at the same time giving freely of cold drink.

12. After the eruption, the continuing the application of cold air, and the use of purgatives, during the course of the disease, till the pustules are fully ripened.

On these measures Dr Cullen observes, that, as the common infection may often seize persons under a diseased state, which may render the small-pox more violent, it is evident that inoculation must have a great advantage by avoiding such concurrence. But as the avoiding of this may in the mean time frequently leave persons exposed to the common infection, it is well worth while to inquire what are the diseased states which should restrain from the practice of inoculation. This is not yet sufficiently ascertained: for it hath been observed, that the small-pox has often occurred with a diseased state of the body, without being thereby rendered more violent; and it hath also been observed, that some diseases of the skin are equally innocent. Dr Cullen is of opinion, that they are diseases of the febrile kind, or such ailments as induce or aggravate a febrile state, that especially give the concurrence which is most dangerous with the small-pox. He is also of opinion, that though a person be in a diseased state, if that state be of uncertain nature and effect, and at the same time the small-pox are very common in the neighbourhood, so that it must be extremely difficult to guard against the common infection, it will always be safer to give the small-pox by inoculation than to leave the person to take them by the common infection.

Though inoculation has been practised with safety upon persons of all ages, yet there is reason to conclude, that adults are more liable to a violent disease than persons of younger years. At the same time it is observed, that children, in the time of their first dentition, are liable, from the irritation of that, to have the small-pox rendered more violent; and that infants, before the time of dentition, upon receiving the contagion of the small-pox, are liable to be afflicted with epileptic fits, which frequently prove fatal. Hence it is evident, that though circumstances may admit and approve of inoculation at any age, yet for the most part it will be advantageous to choose persons after the first dentition is over, and before the time of puberty. But, in large cities in particular, if the operation be delayed till after dentition, the patient must run many risks of accidental infection, and thus many will be cut off by the natural small-pox who might have been saved by more early inoculation. Accordingly, in towns especially, it is now the common practice to inoculate infants when only three or four months old; and indeed accidents so rarely happen, that it is almost impossible to conceive that greater success can be obtained at any other period of life.

The operation of inoculation may be performed at any season of the year; yet as it is certain that the cold of winter may increase the inflammatory, and the heats of summer increase the putrescent, state of the small-pox, it is highly probable that inoculation may have some advantage from avoiding the extremes either of cold or heat.

As the use of animal-food may increase both the inflammatory and putrescent state of the human body, so it must render persons, in receiving the contagion of the small-pox, less secure against a violent disease; and therefore inoculation may derive some advantage by enjoining abstinence from animal-food for some time before the operation is performed: but Dr Cullen is of opinion, that a longer time is necessary than what is commonly prescribed.

Mercurial and antimonial preparations may have some effect in determining to a more free perspiration, and therefore may be of some use in preparing a person for the small-pox; but there are many observations which render their use doubtful. The quantity of both these medicines, particularly the antimony, commonly employed, is too inconsiderable to have any effects. Mercurials indeed have been often employed more freely; but even their salutary effects have not been evident, and they have sometimes been manifestly productive of mischief. It is therefore much to be doubted, whether inoculation really derives any benefit from these preparatory courses or not.

It has been often observed, in the case of almost all contagions, that cold, intemperance, fear, and some other circumstances, concurring with the application of the contagion, have greatly aggravated the future disease; it must undoubtedly be the same in the case of the small-pox: and it is certain that inoculation must derive a great advantage, perhaps its principal one, from avoiding the concurrences above-mentioned.

It has commonly been supposed, that inoculation derives some advantage from the choice of the matter employed in it; but it is very doubtful if any choice

Exanthemata

be here necessary, or can be of any benefit in determining the state of the disease. It is not indeed probable that there is any difference of contagion producing the small-pox; for there are innumerable instances of the contagion arising from a person who labours under the distinct small-pox producing the confluent kind, and the contrary. Since the practice of inoculation hath been introduced, it has also been observed, that the same variolous matter would in one person produce the distinct and in another the confluent small-pox. It is therefore highly probable, that the difference of the small-pox does not much depend upon any difference of the contagion, but upon some difference in the state of the persons to whom it is applied, or in the state of certain circumstances concurring with the application of the contagion.

Some have supposed, that inoculation has an advantage over the natural infection, by introducing only a small portion of contagious matter into the body; but this is by no means well ascertained. It is not known what quantity of contagion is introduced into the body by the common infection of the small-pox; and it is probable the quantity is not great: nor, though it were larger than that thrown in by inoculation, is it certain what the effects would be. A certain quantity of ferment may be necessary to excite fermentation in a given mass; but when that quantity is given, the fermentation and assimilation are extended to the whole mass; and we do not find that a greater quantity than is just necessary, either increases the activity of the fermentation, or more certainly secures the assimilation of the whole. In the case of the small-pox, a considerable difference in the quantity of the contagion introduced hath not shown any effects in modifying the disease.

Purging has the effect of diminishing the activity of the sanguiferous system, and of obviating the inflammatory state of it; and therefore it is probable, that the frequent use of cooling purgatives gives a considerable advantage to the practice of inoculation; and probably this is also obtained by diminishing the determination to the skin. It seems also probable, that mercurials and antimonials are useful only as they make part of the purging course.

It is probable that the state of the small-pox depends very much upon the state of the eruptive fever, and particularly in avoiding the inflammatory state of the skin; and therefore it is also probable, that the measures taken for moderating the eruptive fever, and inflammatory state of the skin, are the greatest improvement which has been made in the practice of inoculation. The tendency of purging, and the use of acids to this purpose, is sufficiently obvious: and upon the same grounds we should suppose that blood-letting might be useful; but probably this has been omitted, and perhaps other remedies might be so, since we have found a more powerful and effectual one in the application of cold air and the use of cold drink.

It hath been the practice of inoculators to continue the use of purgatives and the application of cold air after the eruption; but it cannot be said to give any particular advantages to inoculation, and the employment of purgatives seems often to have led to an abuse. When the state of the eruption is determined, when the number of pustules is very small,

and the fever has entirely ceased, the safety of the disease may be said to be ascertained, and further remedies absolutely superfluous: in such cases therefore the use of purgatives is unnecessary, and may be hurtful.

It remains now only to consider the treatment of the small-pox, when the symptoms are violent, as may sometimes happen, even after inoculation and every remedy and precaution have been used. The cause of this is not ascertained, but it seems to be a putrescent tendency of the fluids. When therefore, from the prevailing of small-pox as an epidemic, and more especially when it is known that a person not formerly affected with the disease has been exposed to the infection, if such person should be attacked with the symptoms of fever, there can be little doubt that it is the fever of the small-pox, and therefore he is to be treated in every respect as if he had received the disease by inoculation. He is to be freely exposed to cool air, to be purged, and to have cooling acids given liberally. If these measures moderate the fever, nothing more is necessary: but if the nature of the fever be uncertain; or if, with suspicions of the small-pox, the fever be violent; or even if, knowing the distemper to be the small-pox, the measures above-mentioned do not moderate the fever sufficiently; venesection will be proper; and more especially if the person be an adult, of a plethoric habit, and accustomed to full living. In the same circumstances it will always be proper to give a vomit; which is useful in the beginning of all fevers, and especially in this, where a determination to the stomach appears by pain and spontaneous vomiting.

It frequently happens, especially in infants, that, during the eruptive fever of the small-pox, convulsions occur. Of these, if only one or two fits appear on the evening preceding the eruption, they give a prognostic of a mild disease, and require no remedy: but if they occur more early, are violent, and frequently repeated, they are very dangerous, and require a speedy remedy; and here bleeding and blistering are of no service, the only effectual medicine is an opiate given in a large dose.

These are the remedies necessary during the eruptive fever; and if, upon the eruption, the pustules on the face are distinct, and their number few, the disease requires no further remedies. But when, upon the eruption, the number of pimples on the face is considerable, when they are not distinct; and especially if, upon the fifth day, the fever does not suffer a considerable remission; the disease still requires a great deal of attention.

If, after the eruption, the fever shall still continue, the avoiding of heat and the continuing to expose the body to a cool air will still be proper. If the fever be considerable, with a full hard pulse, in an adult person, a bleeding will be necessary, and more certainly a cooling purgative: but it will be seldom necessary to repeat the bleeding, as a loss of strength very soon comes on; but the repetition of a purgative, or the frequent use of laxative glysters, is commonly advantageous.

When a loss of strength, with other marks of a putrescent tendency of the fluids, appears, the Peruvian bark must be given in substance, and in large quantity.

Variola.

Exanthemata

Variola

quantity. In the same case, the use of acids and of nitre is advantageous, and commonly it is proper also to give wine very freely. From the fifth day of the disease throughout the whole course of it, it is proper to give an opiate once or twice a-day; taking care at the same time to obviate costiveness, by purgatives or by laxative glysters. From the eighth to the eleventh day of a violent disease, it will be proper to lay on blisters successively on different parts of the body, and that without regard to the parts being covered with pustules. Blisters are also to be applied to the external fauces, in case of difficult deglutition, and viscid saliva and mucus, which are thrown out with difficulty, at the same time that detergent gargles are to be diligently used. During the whole course of this disease, when a considerable fever is present, antimonial medicines, in nauseating doses, have by some been alleged to be employed with advantage; and in this way they have often the effect of moving the belly. But the great distress which patients suffer from a state of constant nausea is hardly to be borne; and every advantage which can be had from this practice may be obtained by easier means.

The remedies above-mentioned are frequently proper from the fifth day till the suppuration be finished. But after that period the fever is sometimes continued and increased; or sometimes, when there was little or no fever before, a fever now arises and continues with considerable danger; this is called the *secondary fever*, and requires a particular treatment.

When the secondary fever follows the distinct small-pox, and the pulse is full and hard, the case is to be treated as an inflammatory affection, by bleeding and purging; but the secondary fever which follows the confluent kind is to be considered as a putrid disease, and bleeding is improper. Some purging may be necessary, but the remedies to be chiefly depended upon are the Peruvian bark and acids. When the secondary fever first appears, whether after a distinct or confluent small-pox, it is useful to exhibit an antimonial emetic in nauseating doses, but in such a manner as to produce some vomiting. For avoiding the pits which frequently follow the small-pox, no method hitherto proposed seems to be sufficiently certain.

On the subject of inoculation, Baron Dimisdale, a very celebrated writer, informs us, that were it left to his choice, he would decline inoculating children under two years old; because within that period they are exposed to all the dangers of dentition, fevers, fluxes, convulsions, and other accidents, sufficiently difficult in themselves to manage in such tender subjects.

In regard to constitution, Baron Dimisdale observes, that greater liberties may be taken than were formerly judged admissible. Persons afflicted with various chronic complaints, of scrophulous, scorbutic, and arthritic habits; persons of unwieldy corpulency, and of intemperate, irregular lives; have all passed through this disease with as much facility as the most temperate, healthy, and regular. But those who labour under any acute or critical disease, or its effects, are obviously unfit and improper subjects. So likewise are those in whom are evident marks of corrosive acrimonious humours, or who have an evident debility of the whole frame from inanition or any other cause. All such require to be treated in a particular manner pre-

vious to the introduction of this disease. Constitutions disposed to frequent returns of intermittents, seem likewise justly exceptionable; especially as the preparatory regimen may in some habits increase this tendency. Baron Dimisdale, however, has known instances of severe ague-fits attacking persons between the insertion of the matter and the eruption of the small-pox, and even during maturation, when the Peruvian bark has been given liberally and with much success; the principal business, in the mean time, suffering no injury or interruption.

Among the circumstances generally considered as more or less propitious to inoculation, the season of the year has been reckoned a matter of some importance. Spring and autumn have been generally recommended, as being the most temperate seasons; the cold of winter and the summer-heats having been judged unfavourable for this purpose. But Baron Dimisdale remarks, that experience does not justify those opinions; for, according to the best observation he has been able to make, inoculated persons have generally had more pustules in spring than at any other time of the year; and epidemic diseases being commonly most frequent in autumn, especially fluxes, intermittents, and ulcerated sore throats (all which are liable to mix more or less with the small-pox), the autumn, upon this account, does not seem to be the most favourable season in general.

Baron Dimisdale's opinion is, that considering the surprising and indisputable benefits arising at all times to patients in the small-pox, from the free admission of fresh cool air and evacuations, we may safely inoculate at all seasons, provided care be taken to screen the patients as much as possible from heat in summer, and to prevent them from keeping themselves too warm and too much shut up, as they are naturally disposed to do, from the weather in winter. When seasons, however, are marked with any peculiar epidemics, of such a kind especially as may render a mild disease more untractable, it may perhaps be most prudent not to inoculate while such diseases are prevalent.

In directing the preparatory regimen, Baron Dimisdale principally aims at the following points, viz. To reduce the patient, if in high health, to a lower and more secure state; to strengthen the constitution, if too low; to correct what appears vitiated; and to clear the stomach and bowels, as much as may be, from all crudities and their effects. With this view he orders such of his patients as constitute the first class above-mentioned, and who are by much the majority, to live in the following manner: To abstain from all animal food, including broths, and likewise butter and cheese; from all fermented liquors, excepting small beer, which is allowed sparingly; and from all spices, and whatever is endued with a manifest heating quality. The diet is to consist of pudding, gruel, sago, milk, rice-milk, fruit-pyes, greens, roots, and vegetables of any of the kinds in season, prepared or raw. Eggs, though not to be eaten alone, are allowed in puddings, and butter in pye-crust. The patients are to be careful that they do not eat such a quantity as to overload their stomachs, even of this kind of food. Tea, coffee, or chocolate, are permitted for breakfast, to those who choose or are accustomed to them.

Exanthemata

In this manner they are to proceed about nine or ten days before the operation; during which period, at nearly equal distances, they are directed to take three doses of the following powder, either made into pills or mixed with a little syrup or jelly, at bed-time, and a dose of Glauber's salts dissolved in thin water-guel, each succeeding morning.

The powder is composed of eight grains of calomel, the same quantity of the compound powder of crab's-claws, and one eighth part of a grain of emetic tartar. Instead of the latter, Baron Dimsdale has sometimes substituted two grains of precipitated sulphur of antimony. In order to facilitate the division of the doses, a large quantity is prepared at once, and great care taken that the several ingredients be well mixed.

This quantity is usually sufficient for a healthy strong man; and the dose must be lessened for women or children, according to their age and strength, as well as for persons advanced in years.

The first dose is generally ordered at the commencement of the course; the second, three or four days after; and the third about the eighth or ninth day. The Baron chooses to inoculate the day after the last dose has been taken. On the days of purging, broths are allowed, and the patients are desired to abstain from unprepared vegetables.

What has been said concerning the preparation, must be considered as proper only for the young or middle aged, in a good state of health: but among those who are desirous of inoculation, are often found tender, delicate, and weakly women; men of bad stamina, valetudinarians by constitution, by illness, or intemperance; also aged persons, and children; and for all such a very different treatment must be directed. Here a milder course of medicine, rather of the alterative than purgative kind, is preferable; and in many instances, an indulgence in some light animal-food, with a glass or two of wine in case of lowness, is not only allowable, but necessary to support a proper degree of strength, especially in advanced age.

Children, whose bowels are often tender, and ought not be ruffled by strong purges, yet require a mild mercurial, and bear it well. Besides emptying the bowels of crudities, it is a good security against worms and their effects, which sometimes produce very alarming and even fatal disorders.

Inattention to the particular state of health of those who are entering upon the preparatory course, has been productive of great mischief. This is chiefly observable respecting the indiscreet use of mercurials, by which a salivation has often been raised, to the risk of impairing good constitutions, and the ruin of such as were previously weak and infirm. The distinctions and treatment necessary, will be obvious to those who are acquainted with the animal economy and medical practice.

The time of menstruation has generally been the guide in respect to the inoculation of women, that the whole of the disease may be over within the menstrual period. Baron Dimsdale informs us, that he observes this rule, when he can choose his time without any inconvenience, and he inoculates soon after the evacuation ceases; tho' he has no reason to decline performing the operation at any time.

Women with child have likewise been inoculated, and done well; but the state of pregnancy seems unfavourable to the process, which ought therefore not to be hazarded without some urgent reason. Baron Dimsdale has not inoculated any woman whom he knew to be pregnant; but on some who concealed their pregnancy he has performed the operation, without producing a miscarriage; the hope of which event, he suspects, had rendered them desirous of the process. One of those had a child born nine weeks after inoculation, at the full time, with distinct marks of the disease, though the mother had very few pustules.

The manner most commonly practised in this country for communicating the small-pox by inoculation, has of late been the following: A thread was drawn through a ripe pustule, and well moistened with matter. A piece of this thread was insinuated into a superficial incision made in one or both arms, near the part where issues are usually fixed; and being covered with a plaster, was there left for a day or two.

Very different methods of inoculation, however, are pursued; two of which Baron Dimsdale has frequently practised and describes; but he informs us, that the following has proved so invariably successful, as to induce him to give it the preference.

The patient to be infected being in the same house, and, if no objection be made to it, in the same room, with one who has the disease, a little of the variolous matter is taken from the place of insertion, if the subject be under inoculation; or a pustule, if in the natural way, on the point of a lancet, so that both sides of the point are moistened.

With this lancet an incision is made in that part of the arm where issues are usually placed, deep enough to pass through the scarf-skin, and just to touch the skin itself; and in length as short as possible, not more than one eighth of an inch.

The little wound being then stretched open between the finger and thumb of the operator, the incision is moistened with the matter, by gently touching it with the flat side of the infected lancet. This operation is generally performed in both arms, and sometimes in two places in one arm, a little distant from each other. For as Baron Dimsdale has not observed any inconvenience from two or three incisions, he seldom trusts to one; that neither he nor his patient may be under any doubt about the success of the operation from its being performed in one place only.

Baron Dimsdale has also tried the following method, with the same success as that above described; but he does not so much approve of it, because he has been credibly informed that it has sometimes failed in the practice of others. A lancet being moistened with the variolous fluid in the same manner as in the other, is gently introduced, in an oblique manner, between the scarf and true skin, and the finger of the operator is applied on the point, in order to wipe off the infection from the lancet, when it is withdrawn. In this method, as well as in the former, a little blood will sometimes appear; but Baron Dimsdale neither draws blood with design, nor does he think there is any necessity of wiping it off before the matter is introduced.

In both these ways of inoculating, neither plaster, bandage,

Variola.

bandage, nor covering is applied, nor in any respect necessary.

Baron Dimisdale informs us, that those methods of producing this disease have never once failed him; and experience has sufficiently proved that there is no danger from additional infection by the natural disease at the same time. He therefore makes no scruple of having the person to be inoculated, and the person from whom the infection is to be taken, in the same room; nor has he ever observed any ill consequence attending this practice. But he advises the inoculated patients (though perhaps there be no necessity for that precaution) to be afterwards separated from places of infection till certain signs of success appear, when all restraint is removed, there being then no danger from accumulation.

Baron Dimisdale remarks, that it seems to be of no consequence whether the infecting matter be taken from the natural or inoculated small-pox. He has used both, and never has been able to discover the least difference, either respecting the certainty of infection, the progress, or the event. He therefore takes the infection from either, as opportunity offers, or at the option of the patients or their friends.

Neither is it of any consequence whether the matter be taken before, or at the crisis of, the distemper. It is generally supposed, that the small-pox is not infectious till after the matter has acquired a certain degree of maturity; and in the common method of inoculation this is so much attended to, that when the operation has proved ineffectual, the failure has been ascribed to the unripeness of the matter.

But, as the author remarks, it appears very clearly from the present practice of inoculation, that so soon as any moisture can be taken from the infected part of an inoculated patient, previous to the appearance of any pustules, and even previous to the eruptive fever, this moisture is capable of communicating the small-pox with the utmost certainty. Baron Dimisdale has taken a little clear fluid from the elevated pellicle on the incised part, even so early as the fourth day after the operation; and has at other times used matter fully digested at the crisis, with equal success. In general, however, he prefers taking the matter for infection during the eruptive fever, as he supposes it at that time to have its utmost activity.

In all cases, when he takes matter from an inoculated person, it is from the place where it was inserted; as he is always sure to find infection there if the disease succeeds, and always of sufficient energy.

It may appear strange that no bandage, dressing, or application whatsoever, is used to the part infected; but that the most simple incision being made, and moistened with the smallest particle of the recent fluid matter, the whole is committed to nature. This method, however, the Baron observes, is perfectly right: because the application of either plaster or unguent, as is the usual practice, will occasion an inflammation on some skins; and, in all, tend to disfigure the natural appearance of the incision, and prevent our forming a proper judgment of the progress of the infection.

If neither an inoculated patient be at hand, nor any one in the neighbourhood has a distinct kind of the natural disease, a thread may be used as in the common manner, provided it be very recently infected; but

Baron Dimisdale is of opinion, that the thread ought to be used as soon as possible after being charged with the infecting matter. Variola.

The method of inoculation recommended by Baron Dimisdale is now almost universally adopted; or at least if any change has taken place, the operation is, if possible, still more simplified. Without the trouble of bringing to the same house both the person from whom the contagion is to be taken and the person to whom it is to be given, the operator in general carries the matter about with him on what is called a *reservoir lancet*. For this purpose a common lancet may be employed; but one, the blade of which is accurately inclosed in a metallic case, so constructed as to prevent the access of the air, and at the same time not to rub off the matter, is certainly preferable. The infectious matter on this lancet is gently moistened by holding it for a few seconds over the steam of warm water; and by rubbing on it the point of another lancet, as much is taken off as is sufficient for giving the disease, which is done by introducing this infected point under the scarf-skin, in the manner Baron Dimisdale has recommended. Where fresh matter can be had, it is always preferable: but where this cannot be obtained, a lancet may be infected from a dry pustule, though kept for many months, by moistening it in warm water; particularly if care has been taken to preserve it from the action of external air by keeping it in a close phial.

A due attention to the progress of infection, discoverable by the part where the operation was performed, is a necessary circumstance; because a just prognostic may thence be sometimes formed of the future state of the distemper, and indications may be taken from the different appearances on the arm, that will enable us to prevent inconveniences.

Baron Dimisdale observes, that the former method of covering the place of incision with a plaster, and continuing upon it dressings of one sort or other, prevented much useful information of this kind. They precluded any judgment by the touch, and sometimes rendered that by the eye equivocal.

The day after the operation is performed, though it takes effect, little alteration is discoverable. On the second day, if the part be viewed with a lens, there generally appears a kind of orange-coloured stain about the incision, and the surrounding skin seems to contract. At this time Baron Dimisdale usually gives the following medicine at going to bed, either mixed with a little of any kind of jelly, or more frequently made into a pill.

Calomel, and compound powder of crab's-claws, of each three grains; emetic tartar, one-tenth of a grain.

A quantity of this medicine should be carefully prepared at once, in order to make the division more exact.

On the fourth or fifth day, upon applying the finger, a hardness is perceptible to the touch. The patient feels an itching on the part, which appears slightly inflamed; and under a kind of vesication is seen a little clear fluid, the part resembling a superficial burn. About the sixth, most commonly some pain and stiffness is felt in the axilla; a circumstance which not only foretells the near approach of the eruptive symptoms, but

Exanthemata

but is a sign of a favourable progress of the disease. Sometimes on the seventh, oftener on the eighth day, symptoms of the eruptive fever appear; such as slight remitting pains in the head and back, succeeded by transient shiverings and alternate heats, which continue in a greater or less degree till the eruption be perfected. At this time also it is usual for the patient to complain of a very disagreeable taste in his mouth, the breath is always fetid, and there ensues a smell peculiar to the variolous eruptive fever.

The inflammation in the arms at this time spreads fast; and, upon viewing it with a good glass, the incision for the most part appears surrounded with an infinite number of small confluent pustules, which increase in size and extent as the disease advances. On the tenth or eleventh day, a circular or oval efflorescence is usually discovered surrounding the incision, and extending sometimes near half round the arm, but more frequently to about the size of a shilling; and being under the cuticle, is smooth to the touch and not painful. This appearance also is favourable. It accompanies eruption; every disagreeable symptom ceases; and at the same time it certainly indicates the whole affair to be over, the pain and stiffness in the axilla also going off.

The feverish symptoms are for the most part so mild, as seldom to require any assistance, except a repetition of the same medicine that was directed on the second night after the operation; and next morning the following laxative draught should be given, to procure three or four stools.

Infusion of senna two ounces, manna half an ounce, tincture of jalap two drachms.

These are given as soon as the eruptive symptoms are perceivable, if they seem to indicate any uncommon degree of vehemence.

It has been observed, that by attending to the progress of infection, we may in general be able to prognosticate with some degree of certainty the issue of the distemper. Particular incidents will ever happen, but not sufficient to invalidate the propriety of general rules.

If the appearances already described are observed early, a very favourable event may be expected; but it happens in some cases, that the success of the inoculation is barely perceptible, the colour about the wound remaining pale, instead of changing to red or inflamed; the edges of the incision spread but little, they remain almost entirely flat, and are attended neither with itching nor uneasiness of any kind. Nay, sometimes on the fifth, and even the sixth day, the alteration is so little as to render it doubtful whether the infection has taken place.

When matters are in this state, Baron Dimsdale observes the appearance is unfavourable, implying a late and more untoward disease: To prevent which, he directs the powder or pill to be taken every night; and in case it fails to operate by stool, or there be the least disposition to costiveness, an ounce of Glauber's salts, or more commonly the laxative draught already mentioned, is given in the morning, once or twice, as the case may require. This course forwards the inflammation, which is always a desirable circumstance; it being in general observed, that an early progress on the arm, and an early commencement of the eruptive

N^o 205.

complaints, portend that the distemper will be mild and favourable; and on the contrary, when both are late, the symptoms he tells us are usually more irregular and unfavourable.

Further experience, however, has by no means fully confirmed his opinion in this particular. On the contrary, even where the progress of infection in the arm has been uncommonly slow, a disease in the mildest possible form has succeeded. There is therefore no good reason why a practitioner should be alarmed at an uncommonly slow progress, or should in such instances employ more internal remedies than he would do in other cases. And some, whose practice in inoculation has been very extensive, have even remarked, that when infants are inoculated, they have never observed epileptic accessions, the most alarming forerunners of the disease, in those cases where the progress of the arm has been slow.

The management recommended by Baron Dimsdale at the period of eruption differing essentially from that of former practitioners, and being a matter of great importance, he gives the following explicit directions on this head, advising that they may be pursued with firmness and moderation.

Instead of the patient being confined to his bed or his room, when the symptoms of the eruptive fever come on, he is directed, as soon as the purging medicine has operated, to keep abroad, as much as he can bear, in the open air, be it ever so cold; always taking care not to stand still, but to walk about moderately while abroad. He is also directed, if thirsty, to drink cold water.

Baron Dimsdale observes, that this treatment seems as hard at first to the patients as it must appear singular to those who are unacquainted with such practice; but the effects are so salutary, so constantly confirmed by experience, and an easy progress through every stage of the disease depends so much upon it, that he admits of no exception, unless the weather be extremely severe and the constitution very delicate. He adds, it is indisputably true, that, in the few instances where the symptoms of eruption have run very high, the patients being averse to any motion, and fearing the cold as the greatest evil; yet when, under those circumstances, he has persuaded them to rise out of bed, and go out of doors, though led sometimes by two assistants, and has allowed them to drink as much cold water as they chose, they have not suffered the least unfavourable accident: on the contrary, after they have been prevailed upon to comply with those directions, they find their spirits revived; an inclination for nourishment returns; they rest well; a gentle sweat succeeds, accompanied with a favourable eruption; and the fever seems to be entirely extinguished.

Cool regimen during the eruptive fever is now almost universally adopted; but like other useful remedies it has not unfrequently been abused: And practitioners ought never to forget, that inoculated patients are not, more than the rest of the human species, exempted from injuries from cold, which is unquestionably a powerful cause of disease. Unless, therefore, in cases where very considerable morbid heat is induced by the eruptive fever, by which a temporary defence is unquestionably afforded against the action of

Variola.

external

Exanthemata

external cold, the bad effects which may result from it are never to be overlooked. And there is even reason to believe, as may indeed be inferred from Baron Dimisdale's observations, that the disease is more moderated by the action of pure and free air than by cold. Accordingly inoculation is performed with very great success even in the warmest seasons and situations of warm climates.

In general, the complaints in this state are very moderate, and attended with so little illness that the patient eats and sleeps well the whole time. A few pustules appear, sometimes equally disposed; sometimes the inflammations on the arms spread, and are surrounded with a few pustules, which gradually advance to maturity; during which time, for the most part, the eruption proceeds kindly, and there is much more difficulty to restrain the patients within due bounds, and prevent their mixing with the public, thereby spreading the infection, than there was at first to prevail upon them to go abroad. During this time medicine is seldom wanted; the coolest air seems the best cordial; and if any uncommon languor happens, a basin of small broth, or a glass of wine, is allowed in the day, or some white-wine whey at bed-time; which are indeed at any time allowed to tender, aged, or weakly persons.

With these exceptions, the patients are hitherto kept very scrupulously to the diet at first directed. But after the eruption is completed, they are, if occasion requires, indulged in a little well-boiled meat of the lightest kind, as chicken, veal, or mutton.

The above-mentioned regimen, the cooling alterative purges, and the free use of cool air at the season of eruption, almost universally prevent either alarming symptoms or a large crop of pustules. Baron Dimisdale has seen a few with such a quantity of pustules, though distinct, that he has neither advised nor allowed them to go out of the house. But the generality of his patients, when the eruptions are few, amuse themselves abroad, within proper limits, with the pustules upon them.

This practice, however, the Baron neither enjoins nor maintains to be necessary; but he has not been able to observe that any inconvenience has arisen from it. He also informs us, that, how strange soever it may appear, those who are most adventurous, seem to enjoy better spirits, and are more free from complaints, than others who are inclined to keep within doors.

Those who have the disease in the slightest manner first described, viz. without any appearance of eruption but on the inoculated part, are soon permitted to go about their usual affairs: and many instances have happened of very industrious poor men, who have immediately returned to their daily labour, with a caution not to intermix with those who have not had the distemper, for fear of spreading it; and with injunctions to take, two or three times, of the purge already directed, or as many doses of Glauber's salts. Those who have the disease in a greater degree, are confined somewhat longer; and, if there be the least disposition to costiveness, a very mild laxative is now and then exhibited; as the progress to maturation appears rather to be advanced than retarded by such means.

When the maturation is completed, and there is

Vol. XI. Part I.

nothing farther to fear from the distemper, Baron Dimisdale allows his patients gradually to change their course of diet, from the perfectly cooling kind, to one a little more generous; recommending strictly to all a return to their ordinary animal-diet, with much caution and restraint upon their appetites, both in respect of food and fermented liquors.

He observes it is not often that we are under the necessity of making any application to the part where the insertion of the variolous matter was made. It most commonly heals up, and is covered with a scab, about the time when, in a natural way, all the small-pox would have been dried up. But in some cases the incisions continue to discharge a purulent matter a longer time. In these instances it is sufficient to cover the part with the white cerate, or any other mild emplastick substance, which may at once prevent the linen from adhering to the sore, and defend it from the air. As in these cases the part remains unhealed from some peculiar cause in the habit, it will be necessary to give gentle purgatives, and proper alteratives, as particular exigencies may require.

After describing the usual progress of the small-pox from inoculation, Baron Dimisdale remarks that there are frequent deviations from this course, which may embarrass an unexperienced practitioner, and create a real difficulty, as well as apprehensions of danger. He therefore proceeds to relate the means for removing those symptoms, and the doubts respecting the event.

The symptom he first notices, and which, though it very rarely happens, sometimes gives much trouble, is great sickness, accompanied with vomiting, in the eruptive state of the disease. For this complaint it is always necessary in the first place to clear the stomach; which may be effected, either by ordering the patient to drink plentifully of warm liquids to promote vomiting; or perhaps more properly, by giving to an adult one grain of tartarised antimony, mixed with ten grains of compound powder of crab's-claws; taking care to diminish the dose for very young and weak subjects.

This usually throws off some bilious matter by vomit, sometimes procures stools, or occasions a moderate sweat, and generally administers relief. If, however, no stools should follow from this medicine, and the sickness should remain, a gentle laxative almost certainly procures a respite, and the appearance of the eruption entirely removes the complaint.

Another deviation, of yet greater consequence, which sometimes happens towards the time of the eruption, and is often, though not always, accompanied with great sickness, is an erysipelatous efflorescence. If this shows itself on the skin partially, and here and there in patches, it is not very alarming, and soon wears off. But sometimes the whole surface of the body is covered with a rash intimately mixed with the variolous eruption, and so much resembling the most malignant kind of confluent small-pox as scarcely to be distinguished from it. In some such cases, accompanied with petechiæ and livid spots, Baron Dimisdale has been much alarmed; not being able by inspection only, though assisted by glasses, to determine whether what he saw was an inoffensive rash, or tokens of the greatest malignity. Very strict attention, however, has

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Variola.

Exanthemata

enabled him to distinguish the difference clearly; and for assisting others in such a discrimination, he makes the following remarks.

The real and essential difference is to be gathered from the concomitant symptoms. In the erysipelatous or variolous rash, there is not so much fever, nor is the restlessness or pain of the head or loins so considerable; neither is there that general prostration of strength; all which are usual attendants on a confluent small-pox, especially when accompanied with such putrid appearances. Besides, upon a careful examination, there may sometimes be discerned a few distinct pustules, larger than the rest, mixed with the rash, which are the real small-pox. In those cases the patients are ordered to refrain from cold water, or any thing cold; and to keep within doors, but not in bed. If any sickness yet remains, a little white-wine whey, or other temperate cordial, is advised; and this method has been so generally successful, as to prevent any alarming complaint. After two or three days, the skin changes from a florid to a dusky colour, a few distinct pustules remain, and advance properly to maturation, without any farther trouble ensuing from this formidable appearance.

This rash has often been mistaken for the confluence it so much resembles; and has afforded occasion for some practitioners, either ignorantly or disingenuously, to pretend, that, after a very copious eruption of the confluent pox, they can by a specific medicine discharge the greater part of the pustules, leaving only as many distinct ones as may satisfy the patient that he has the disease.

Baron Dimsdale informs us, that rashes of the kind above described frequently happen during the preparation (whether owing to the regimen, or medicine, or both, he does not determine), and cause the operation to be postponed. But he has observed, that in such cases they are apt to return at the time of the eruption of the small-pox.

In general, as has been already said, the symptoms which precede eruption commence at the end of the seventh or on the eighth day inclusive from the operation; but it often happens that they appear much sooner, and sometimes much later than this period. Baron Dimsdale has seen some cases in which the disease has come on so suddenly after infection, and with so little complaint or uneasiness, that the whole affair has been terminated, purges taken, and the patient returned home perfectly well, in a week; before others, inoculated at the same time, from the same patient, and under the same circumstances, have begun to complain.

In this case, the inoculated part shows early certain marks of infection, sometimes on the very next day, or the day after, when the incision will often appear considerably inflamed and elevated. The patient about this time frequently makes some of the following complaints, viz. chilliness, itchings, and slight pricking pains in the part, and sometimes on the shoulder; giddiness, drowsiness, and a slight head-ach, sometimes attended with a feverish heat, but often without any. The account which patients themselves give of their feelings is, in some, as if they had drank too much, and in others, as if they had caught a cold. Those complaints seldom last 24 hours, often not so long,

and with frequent intermissions; never, so far as our author remembers, rising to a degree that requires confinement. During the continuance of those complaints, the inflammation of the arm advances apace, and feels hard to the touch; but upon their wearing off, the inflamed appearances gradually diminish, and the part dries to a common small scab; the skin, that was before red, turns livid, and the disease entirely vanishes. In some instances, those symptoms attack much later; even on the seventh or eighth day, when an eruption might be expected in consequence of them, yet none appears; but the arm gets well very soon, and the disease is at an end.

In this irregular sort of the disorder there have, however, been some examples where a few eruptions have appeared, and probably in consequence of the inoculation: yet the pustules have not looked like the true small-pox, neither have they matured like them, nor lasted longer than three days; about which time, for the most part, they have dried away.

When this irregular kind of the disease first occurred in Baron Dimsdale's practice, he was in doubt whether the patients were quite secure from any future attacks of the distemper. In order to be satisfied of this point, he inoculated them a second time, causing them to associate with persons in every stage of the disease, and to try all other means of catching the infection. This method has been practised with the generality of such patients ever since, yet without a single instance of its producing any disorder. Baron Dimsdale, therefore, now makes no scruple of pronouncing them perfectly safe; and experience has enabled him to foretel, for the most part, in two or three days after the operation, whether the disease will pass in this slight manner.

Upon the second inoculation, however, the incised parts are uncommonly inflamed for a day or two, just in the same manner as has in numerous instances been observed, as well in those who, though certain of having had the small-pox in the natural way, have submitted to inoculation for the sake of experiment, as in others, who, being doubtful whether they have had the disease or not, have been inoculated in order to be satisfied. But in all such cases, the parts soon became well; nor did any of those appearances which have been described as the constant attendants on inoculation, as pain in the head, giddiness, marks of infection in the arm, &c. ensue. Neither can those appearances ever be produced upon a person who has had the small-pox before, either in the natural way or by inoculation.

Another irregularity deserving notice is, that sometimes upon the abatement of the fever and other symptoms, after the appearance of several pustules, and when the eruptive stage of the disease seems completed, it nevertheless happens that fresh eruptions come out, and continue doing so daily, for four, five, or even six days successively; preceded sometimes by a slight pain in the head, though more frequently they appear without any new disturbance. Those are generally few, of short duration, and seldom come to maturity. Baron Dimsdale, however, has seen four cases, in which, after a cessation of complaints, and an appearance of few pustules, the eruptive stage of the disease was thought to be over, yet in two or three days

Varicella

Exanthemata

a fresh fit of fever has attacked the patients, and after a short illness a quantity of new pustules has broke out far exceeding the first number, and those remained and matured completely.

Some of the Baron's own patients, and, as he has been credibly informed, those of other inoculators, have had considerable eruptions of this kind after they returned home; which have probably given occasion for the reports of several having had the disease in the natural way after inoculation. But in confirmation that those reports are ill-grounded, he observes, that in all the cases of this sort which have occurred in his own practice, or, as far as he can learn, in that of others, the second or latter crop of pustules has always happened within the time usually allowed for the progress of the small-pox from inoculation; before the inflammation on the arm has ceased, and sooner than we can suppose them to have been produced by infection received in the natural way. When this has happened, it has been to persons in whom, after a slight eruption and abatement of symptoms, the disease has prematurely been judged to be quite over, and they have therefore been permitted to return to their families.

An appearance, more alarming and more dangerous than any of those which have already been taken notice of, is the occurrence of epileptic fits. For although it has been remarked, that these are often the forerunners of a mild disease, both in cases of accidental and likewise of intentional contagion; yet it is undeniable, that in not a few instances they have of themselves proved fatal. Wherever, therefore, an epileptic fit occurs, it naturally claims the attention of the practitioner. The occurrence of future fits is best prevented by the employment of tincture of opium, taking off the tendency to inordinate action by giving at least a temporary diminution of irritability; and on the same principle, when during a fit the patient is able to swallow, nothing is more effectual either in shortening the fit or diminishing its severity, than a dose of laudanum accommodated to the age and condition of the patient. Considerable benefit may be derived from any volatile alkaline spirit, such as spirit of hartshorn, the favourite remedy of Dr Sydenham in such cases. But the best effects may be obtained from the use of the tepid bath, which is not only of service in such cases from its action as an antispasmodic, but which also, by producing relaxation of the skin, facilitates and promotes the eruption. And even allowing that, as some imagine, the number of pustules should be increased by heat applied in this manner; yet much less is to be dreaded from thence than from the continuance of the fits.

Baron Dimsdale next considers the consequences that arise from this very cool and repelling method, and how far the patient's future state of health may be affected by a practice so opposite to what was formerly employed.

It has been the general opinion, that in most or all eruptive complaints, especially the small-pox, the rational method of cure was to forward, by every gentle means, the efforts of nature in producing an eruption; and on the contrary, that there was danger in checking it, either by cold air, cold drink, or any considerable evacuations. For this purpose the use of warm

diluents, and the lying in bed, especially if the fever and symptoms run high, or at least confining to the house, have been generally approved and recommended. Experience, however, has now sufficiently confirmed the advantage of a different kind of treatment.

While the old methods prevailed of conducting inoculation, the patients, particularly children, after passing through the disease in a very favourable manner, were frequently liable to abscesses in the axilla and other parts, tedious ophthalmies, and troublesome ulcerations in the place of insertion; which though they could not be foreseen nor prevented, yet often gave more pain and vexation to the patients, and trouble to the operator, than the disease itself had done. But on inquiry into the state of those who have been treated in the cool way, or according to the new method, Baron Dimsdale affirms, that in more than 1500 there has been only one who has had so much as a boil in the axilla; and this was a child who had in the same arm an issue, which was at that time dried up. He has seen only two very small superficial boils in others near the place of insertion; and those seemed to be occasioned rather by an irritation from the discharge than by any other cause, and were all soon healed with very little trouble.

In a few instances also, there has been a slough in the incised part, which has caused a sore of short duration; but not one instance of an ulcer of any continuance. Such little breakings out too, and scabs, as frequently succeed the mild natural small-pox, sometimes, though rarely, happen to those inoculated in the new way; and, as they are of little consequence, are generally cured by the same method, the use of a few gentle purges.

In regard to ophthalmies from this kind of practice, Baron Dimsdale has never known an instance of one truly deserving that name. The coats of the eye have been a little inflamed in a very few, but they soon became clear, without any means used for that purpose. He knows but two cases where he thought the inflammation great enough to require bleeding; and not one where a blister was necessary. Those complaints, therefore, which were formerly so frequent and troublesome, seem to be much reduced by the new method, the great utility of which is now universally acknowledged.

When the benefits of inoculation have now been demonstrated to be so great, it is truly surprising that the practice has not yet become general. Even its wonderful success, however, particularly when contrasted with the natural small-pox, has not been sufficient to remove every prejudice against it; and in many parts of Britain, the lower class are deterred from it by scruples even of a religious nature, by which means the state annually sustains a very considerable loss. It is, however, but just to observe, that in many parts both the medical practitioners and the clergy have done all in their power to remove every difficulty. At Edinburgh, the colleges of physicians and surgeons annually make an offer of their assistance and advice *gratis* to all the poor who submit to this operation during certain months; and a most respectable clergyman has been at the expence of publishing a plain and sensible discourse, not only calculated to remove every religious doubt or scruple which can be entertained on

Variola.

Exanthemata

this head, but also clearly demonstrating to parents, that they have themselves to blame for the death of their children if they neglect to employ the means with which Providence has furnished them for preserving the lives of their offspring.

226

GENUS XXIX. VARICELLA.

CHICKEN-POX.

Varicella, *Vog.* 42.

Variola lymphatica, *Sauv.* sp. 1.

Anglis, *The CHICKEN POX*, Edin. Med. Essays, vol. ii. art. 2. near the end. *Heberden*, Med. Transac. art. 17.

This is in general a very slight disease; and is attended with so little danger, that it would not merit any notice, if it were not apt to be confounded with the small-pox, and thus give occasion to an opinion that a person might have the small-pox twice in his life; or they are apt to deceive into a false security those who have never had the small-pox, and make them believe that they are safe when in reality they are not. This eruption breaks out in many, according to Dr Heberden, without any illness or previous sign; in others it is preceded by a little degree of chilliness, lassitude, cough, broken sleep, wandering pains, loss of appetite, and feverish state for three days.

In some patients the chicken-pox make their first appearance on the back; but this perhaps is not constant. Most of them are of the common size of the small-pox, but some are less. Dr Heberden never saw them confluent, nor very numerous. The greatest number was about 12 in the face, and 200 over the rest of the body.

On the first day of the eruption they are reddish. On the second day there is at the top of most of them a very small bladder, about the size of a millet-seed. This is sometimes full of a watery and colourless, sometimes of a yellowish liquor, contained between the cuticle and skin. On the second, or, at the farthest, on the third day from the beginning of the eruption, as many of these pocks as are not broken seem arrived at their full maturity; and those which are fullest of that yellow liquor very much resemble what the genuine small-pox are on the fifth or sixth day, especially where there happens to be a larger space than ordinary occupied by the extravasated serum. It happens to most of them, either on the first day that this little bladder arises, or on the day after, that its tender cuticle is burst by the accidental rubbing of the clothes, or by the patient's hands to allay the itching which attends this eruption. A thin scab is then formed at the top of the pock, and the swelling of the other part abates, without its ever being turned into pus, as it is in the small-pox. Some few escape being burst; and the little drop of liquor contained in the vesicle at the top of them, grows yellow and thick, and dries into a scab. On the fifth day of the eruption they are almost all dried and covered with a slight crust. The inflammation of these pocks is very small, and the contents of them do not seem to be owing to suppuration, as in the small-pox, but rather to what is extravasated under the cuticle by the serous vessels of the skin, as in a common blister. No wonder, therefore, that this liquor appears so soon as on the second

day; and that, upon the cuticle being broken, it is presently succeeded by a slight scab: hence too, as the true skin is so little affected, no mark or scar is likely to be left, unless in one or two pocks, where, either by being accidentally much fretted, or by some extraordinary sharpness of the contents, a little ulcer is formed in the skin.

The patients scarce suffer any thing throughout the whole progress of this illness, except some languidness of strength and spirits and appetite; all which is probably owing to the confining of themselves to their chamber.

Two children were taken ill of the chicken-pox, whose mother chose to be with them, though she had never had this illness. Upon the eighth or ninth day after the pocks were at their height in the children, the mother fell ill of this distemper then beginning to show itself. In this instance the infection lay in the body much about the same time that it is known to do in the small-pox.

Remedies are not likely to be much wanted in a disease attended with hardly any inconvenience, and which in so short a time is certainly cured of itself.

The principal marks by which the chicken-pox may be distinguished from the small-pox are,

1. The appearance, on the second or third day from the eruption, of that vesicle full of serum upon the top of the pock.

2. The crust, which covers the pocks on the fifth day; at which time those of the small-pox are not at the height of their suppuration.

Foreign medical writers hardly ever mention the name of this distemper: and the writers of our own country scarce mention any thing more of it than its name. Morton speaks of it as if he supposed it to be a very mild genuine small-pox. But these two distempers are surely totally different from one another, not only on account of their different appearances above-mentioned, but because those who have had the small-pox are capable of being infected with the chicken-pox; but those who have once had the chicken-pox are not capable of having it again, though to such as have never had this distemper, it seems as infectious as the small-pox. Dr Heberden wetted a thread in the most concocted pus-like liquor of the chicken-pox which he could find; and after making a slight incision, it was confined upon the arm of one who had formerly had it; the little wound healed up immediately, and showed no signs of any infection.

From the great similitude between the two distempers, it is probable, that, instead of the small-pox, some persons have been inoculated from the chicken-pox; and that the distemper which has succeeded, has been mistaken for the small-pox by hasty or unexperienced observers.

There is sometimes seen an eruption, concerning which Dr Heberden is in doubt whether it be one of the many unnoticed cutaneous diseases, or only a more malignant sort of chicken-pox.

This disorder is preceded for three or four days by all the symptoms which forerun the chicken-pox; but in a much higher degree. On the fourth or fifth day the eruption appears, with very little abatement of the fever: the pains likewise of the limbs and back still continue, to which are joined pains of the gums. The pocks

Exanthemata

pocks are redder than the chicken-pox, and spread wider; and hardly rise so high, at least not in proportion to their size. Instead of one little head or vesicle of a ferous matter, these have from four to ten or twelve. They go off just like the chicken-pox, and are distinguishable from the small-pox by the same marks; besides which, the continuance of the pains and fever after the eruption, and the degree of both these, though there be not above 20 pocks, are circumstances never happening in the small-pox.

227

GENUS XXX. RUBEOLA. MEASLES.

Rubeola, *Sauv.* gen. 94. *Lin.* 4. *Sag.* 293.
Febris morbillosa, *Vog.* 36. *Hoffm.* II. 62.
Morbilli, *Junck.* 76.

Sp. I. The Regular MEASLES.

Rubeola vulgaris, *Sauv.* sp. 1.
Morbilli regulares, *Sydenh.* Sect. iv. cap. 5.

Var. I. The Anomalous MEASLES.

Rubeola anomala, *Sauv.* sp. 2.
Morbilli anomali, *Sydenh.* sect. v. cap. 3.

Var. 2. The MEASLES attended with Quinsy.

Var. 3. The MEASLES with Putrid Diathesis of the Blood.

228

Sp. II. The VARIOLODES. In Scotland commonly called the Nirles.

Rubeola variolodes, *Sauv.* sp. 3.

Description. This disease begins with a cold stage, which is soon followed by a hot, with the ordinary symptoms of thirst, anorexia, anxiety, sickness, and vomiting; and these are more or less considerable in different cases. Sometimes from the beginning the fever is sharp and violent: often, for the first two days, it is obscure and inconsiderable; but always becomes violent before the eruption, which commonly happens on the fourth day. This eruptive fever, from the beginning of it, is always attended with hoarseness, a frequent hoarse dry cough, and often with some difficulty of breathing. At the same time, the eye-lids are somewhat swelled; the eyes are a little inflamed, and pour out tears; and with this there is a coryza, and frequent sneezing. For the most part, a constant drowsiness attends the beginning of this disease. The eruption, as we have said, commonly appears upon the fourth day, first on the face, and successively on the lower parts of the body. It appears first in small red points; but, soon after, a number of these appear in clusters, which do not arise in visible pimples, but, by the touch, are found to be a little prominent. This is the case on the face; but, in other parts of the body, the prominency, or roughness, is hardly to be perceived. On the face, the eruption retains its redness, or has it increased for two days; but on the third, the vivid redness is changed to a brownish red; and in a day or two more the eruption entirely disappears, while a mealy desquamation takes place. During the whole time of the eruption, the face is somewhat turgid, but seldom considerably swelled. Sometimes, after the eruption has appeared, the fever ceases

entirely: but this is seldom the case; and more commonly the fever continues or is increased after the eruption, and does not cease till after the desquamation. Even then the fever does not always cease, but continues with various duration and effect. Though the fever happen to cease upon the eruption's taking place, it is common for the cough to continue till after the desquamation, and sometimes much longer. In all cases, while the fever continues, the cough also continues, generally with an increase of the difficulty of breathing; and both of these symptoms sometimes arise to a degree which denotes a pneumonic affection. This may happen at any period of the disease; but very often it does not come on till after the desquamation of the eruption.

After the same period, also, a diarrhoea frequently comes on, and continues for some time.

It is common for measles, even when they have not been of a violent kind, to be followed by inflammatory affections, particularly ophthalmia and phthisis. If blood be drawn from a vein in the measles, with circumstances necessary to favour the separation of the gluten, this always appears separated, and lying on the surface of the crassamentum, as in inflammatory diseases. For the most part, the measles, even when violent, are without any putrid tendency; but in some cases, such a tendency appears both in the course of the disease, and especially after the ordinary course of it is finished.

Causes. The measles are occasioned by a peculiar kind of contagion, the nature of which is not understood; and which, like that of the small-pox, affects a person only once in his life.

Prognosis. From the description of this distemper already given, it appears that the measles are attended with a catarrhal affection, and with an inflammatory diathesis to a considerable degree; and therefore the danger of them is to be apprehended chiefly from the coming on of a pneumonic inflammation.

Cure. In measles, as well as in small-pox, the disease from its nature must necessarily run a determined course; and therefore the sole aim of a practitioner is to conduct this course in the easiest manner, by preventing and obviating urgent symptoms.

From the consideration mentioned in the prognosis, it will be obvious, that the remedies especially necessary are those which may obviate and diminish the inflammatory diathesis; and therefore, in a particular manner, blood-letting. This remedy may be employed at any time in the course of the disease, or after the ordinary course of it is finished. It is to be employed more or less, according to the urgency of the symptoms of fever, cough, and dyspnoea; and generally may be employed very freely. But as the symptoms of pneumonic inflammation seldom come on during the eruptive fever, and as this is sometimes violent immediately before the eruption, though a sufficiently mild disease be to follow; bleeding is seldom very necessary during the eruptive fever, and may often be reserved for the times of greater danger which are perhaps to follow.

In all cases of measles, where there are no marks of putrescency, and where there is no reason, from the known nature of the epidemic, to apprehend putrescency, bleeding is the remedy most to be depended upon.

Rubeola.

Exanthe-
mata

upon: but assistance may also be drawn from cooling purgatives; and particularly from blistering on the sides or between the shoulders. The dry cough may be alleviated by the large use of demulcent pectorals, mucilaginous, oily, or sweet. It may, however, be observed, with respect to these demulcents, that they are not so powerful in involving and correcting the acrimony of the mass of blood as has been imagined; and that their chief operation is by besmearing the fauces, and thereby defending them from the irritation of acrids, either arising from the lungs or distilling from the head. For moderating and quieting the cough in this disease, opiates certainly prove the most effectual means, whenever they can be safely employed. In the measles, in which an inflammatory state prevails in a considerable degree, opiates have indeed by some been supposed to be inadmissible: but experience abundantly demonstrates, that the objection made to their use is merely hypothetical; and even in cases where, from a high degree of pyrexia and of dyspnoea, there is reason to fear the presence, or at least the danger, of pneumonic inflammation, opiates are highly useful; after bleeding, to obviate or abate the inflammatory state, has been duly employed: in such cases, while the cough and watchfulness are the urgent symptoms, opiates may be safely exhibited, and with great advantage. In all the exanthemata, there is an acrimony diffused over the system, which gives a considerable irritation; and, for obviating the effects of this, opiates are useful, and always proper, when no particular contra-indication prevails.

When the desquamation of the measles is finished, though then there should be no disorder remaining, physicians have thought it necessary to purge the patient several times, with a view to draw off what have been called the *dregs of this disease*; that is, a portion of the morbid matter which is supposed to remain long in the body. Dr Cullen does not reject this supposition; but at the same time cannot believe that the remains of the morbid matter, diffused over the whole mass of blood, can be wholly drawn off by purging; and therefore thinks, that, to avoid the consequence of the measles, it is not the drawing off the morbid matter which we need to study, so much as to obviate and remove the inflammatory state of the system which had been induced by the disease. With this last view indeed, purging may still be a proper remedy; but bleeding, in proportion to the symptoms of inflammatory disposition, is still more so.

From our late experience of the use of cold air in the eruptive fever of the small-pox, some physicians have been of opinion that the practice may be transferred to the measles; but this point has not yet been determined by sufficiently extensive experience. We are certain, that external heat may be very hurtful in the measles, as in most other inflammatory diseases; and therefore, that the body ought to be kept in a moderate temperature during the whole course of the disease: but how far, at any period of the disease, cold air may be applied with safety, is still uncertain. Analogy, though so often the resource of physicians, is frequently fallacious; and further, though the analogy with the small-pox might lead to the application of cold air during the eruptive fever of the measles, the analogy with catarrh seems to be against the practice.

When the eruption is upon the skin, there are many instances of cold air making it disappear, and thereby producing much disorder in the system; and there are also frequent instances of this disorder's being removed by restoring the heat of the body, and thereby again bringing out the eruption.

Upwards of 20 years ago, inoculation for the measles was proposed, and practised in several instances with success, by Dr Home of Edinburgh. His method of communicating the infection was, by applying to an incision in each arm cotton moistened with the blood of a patient labouring under the measles; but with others who have made similar trials, the attempt has not yet succeeded. And attempts have been made to inoculate this disease by means of the fluid discharged under the form of tears, the squamæ falling from the surface, and the like; but there is reason to believe, that where it was imagined the infection had thus been communicated, the contagion was only carried about the person inoculating, and communicated in the ordinary way.

From inoculation of the measles, it is imagined that several advantages may be obtained; and among others, it is thought the soreness of the eyes may be mitigated, the cough abated, and the fever rendered less severe. But the practice was never much in fashion, and now is scarce ever heard of.

GENUS XXXI. MILIARIA.

The MILIARY FEVER.

229

Miliaria, *Lin.* 7.Miliaris, *Sauv.* gen. 95. *Sag.* gen. 295.Febris miliaris, *Vog.* 37.Febris purpurata rubra et alba miliaris, *Hoffm.* II. 68.Febris purpurea seu miliaris, *Junk.* 75.Germanis der Friesel. *God. Welsch*, Hist. Med. de novo puerperarum morbo, qui der Friesel dicitur, *Lips.* 1655.*Hamilon*, de febr. miliar. 1710. *Fantonus*, de febr. mil. 1747. *Allioni* de miliar. 1758. *Fordyce*, de febr. mil. 1748. *Fischer*, de febr. mil. 1767. *De Haen*, de divis. febr. 1760, et in *Ration. med. passim.* *Matt. Collin* ad *Baldinger* de miliar. 1764.Miliaris benigna, *Sauv.* sp. 1.Miliaris maligna, *Sauv.* sp. 2.Miliaris recidivans, *Sauv.* sp. 3.Miliaris Germanica, *Sauv.* sp. 5.Miliaris Boia, *Sauv.* sp. a.Miliaris Britannica, *Sauv.* sp. i.Miliaris nova febris, *Sydenh.* Sched. monit. *Sauv.* sp. d.Miliaris sudatoria, *Sauv.* sp. e.Miliaris nautica, *Sauv.* sp. g.Miliaris purpurata, *Sauv.* sp. b.Miliaris lactea, *Sauv.* sp. c.Miliaris puerperarum, *Sauv.* sp. k.Miliaris scorbutica, *Sauv.* sp. l.Miliaris critica, *Sauv.* sp. b.

History and Description. This disease is said to have been unknown to the ancients, and that it appeared for the first time in Saxony about the middle of the last century. It is said to have since spread from thence into all the other countries of Europe; and, since the period mentioned, to have appeared in many

Exanthe-
mata

Miliaria.

many countries in which it had never appeared before.

From the time of its having been first taken notice of, it has been described and treated of by many different writers; and by all of them, till very lately, has been considered as a peculiar idiopathic disease. It is said to have been constantly attended with peculiar symptoms. It comes on with a cold stage, which is often considerable. The hot stage, which follows, is attended with great anxiety, and frequent sighing. The heat of the body becomes great, and soon produces profuse sweating, preceded, however, with a sense of pricking, as of pin-points in the skin; and the sweat is of a peculiar rank and disagreeable odour. The eruption appears sooner or later in different persons, but at no determined period of the disease. It seldom or never appears upon the face; but appears first upon the neck and breast, and from thence often spreads over the whole body.

The eruption named *miliary* is said to be of two kinds; the one named the *red*, the other the *white miliary*. The former, which in English is strictly named a *rush*, is commonly allowed to be a symptomatic affection; and as the latter is the only one that has any pretensions to be considered as an idiopathic disease, it is this only that we shall more particularly describe and treat of under this genus.

What is then called the *white miliary eruption*, appears at first like the red, in very small red pimples, for the most part distinct, but sometimes clustered together. Their little prominence is better distinguished by the finger than by the eye. Soon after the appearance of this eruption, and, at least, on the second day, a small vesicle appears upon the top of the pimples. At first the vesicle is whey-coloured; but soon becomes white, and stands out like a little globe on the top of the pimple. In two or three days, these globules break, or are rubbed off; and are succeeded by small crusts, which soon after fall off in small scales. While one set of pimples take this course, another set arise to run the same; so that the disease often continues upon the skin for many days together. Sometimes when one crop of this eruption has disappeared, another, after some interval, is produced. And it has been further observed, that in some persons there is such a disposition to this disease, that they have been affected with it several times in the course of their lives.

This disease is said to affect both sexes, and persons of all ages and constitutions; but it has been observed at all times to affect especially, and most frequently, lying-in women.

It is often accompanied with violent symptoms, and has frequently proved fatal. The symptoms, however, attending it are very various; and they are, upon occasions, every one attending febrile diseases; but no symptom, or concurrence of symptoms, are steadily the same in different persons, so as to give any specific character to the disease. When the disease is violent, the most common symptoms are phrenetic, comatose, and convulsive affections, which are also symptoms of all fevers treated by a very warm regimen.

While there is such a variety of symptoms appearing in this disease, it is not to be expected that any one particular method of cure can be proposed; and,

accordingly, we find in different writers different methods and remedies prescribed; frequent disputes about the most proper; and those received and practised by some, opposed and deserted by others.

It appears, however, to Dr Cullen, very improbable, that this was really a new disease, when it was first considered as such. There are very clear traces of it in authors who wrote long before that period; and though there were not, we know that ancient descriptions were often inaccurate and imperfect, particularly with respect to cutaneous affections; and we know also that those affections which commonly appeared as symptomatic only, were often neglected, or confounded together under a general appellation.

The antecedent symptoms of anxiety, sighing, and pricking of the skin, which have been spoken of as peculiar to this disease, are, however, common to many others; and perhaps to all those in which sweatings are forced out by a warm regimen. Of the symptoms said to be concomitant of this eruption, there are none which can be affirmed to be constant and peculiar but that of sweating. This, indeed, always precedes and accompanies the eruption; and, while the miliary eruption attends many different diseases, it never, however, appears in any of these but after sweating; and in persons labouring under the same diseases it does not appear, if in such persons sweating be avoided. It is therefore probable, that the eruption is the effect of sweating: and that it is the effect of a matter not before prevailing in the mass of blood, but generated under particular circumstances in the skin itself. That it depends upon particular circumstances of the skin, is also probable from its being observed that the eruption seldom or never appears upon the face, although it affects the whole of the body besides; and that it comes upon those places especially which are more closely covered; and that it can be brought out upon particular places by external applications.

It is to be observed, that this eruptive disease differs from the other exanthemata in many circumstances, especially the following; that it is not contagious, and therefore never epidemic; that the eruption appears at no determined period of the disease; that the eruption has no determined duration; that successive eruptions frequently appear in the course of the same fever, and that such eruptions frequently recur in the course of the same person's life. All this renders it very probable, that, in the miliary fever, the morbid matter is not a subsisting contagion communicated to the blood, and thence, in consequence of fever and assimilation, thrown out upon the surface of the body, but a matter occasionally produced in the skin itself by sweating.

This conclusion is further rendered probable from hence, that, while the miliary eruption has no symptoms or concurrence of symptoms peculiar to itself, it, upon occasions, accompanies almost every febrile disease, whether inflammatory or putrid, if these happen to be attended with sweating; and from thence it may be presumed, that the miliary eruption is a symptomatic affection only, produced in the manner we have said.

But as this symptomatic affection does not always accompany every instance of sweating, it may be proper to inquire, what are the circumstances which especially,

Escarthe-
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cially determine this eruption to appear? And to this Dr Cullen gives no full and proper answer. He cannot say that there is any one circumstance which in all cases gives occasion to this eruption; nor can he say what different causes, in different cases, may give occasion to it. There is only one observation that can be made to the purpose of this inquiry; and it is, that these persons sweating, under febrile diseases, are especially liable to the miliary eruption, who have been previously weakened by large evacuations, particularly of blood. This will explain why it happens to lying-in women more frequently than to any other persons; and to confirm this explanation, he has observed, that the eruption has happened to other women, though not in child-bed, but who had been much subjected to a frequent and copious menstruation, and to an almost constant *fluor albus*. He has also observed it to have happened to men in fevers, after wounds from which they had suffered a great loss of blood.

Further, that this eruption is produced by a certain state of debility, is, he thinks, probable, from its so often attending fevers of the putrid kind, which are always attended with great debility. It is true, that it also sometimes attends inflammatory diseases, when it cannot be accounted for in the same manner; but he believes it may be observed, that it especially attends those inflammatory diseases in which the sweats have been long protracted, or frequently repeated, and which have thereby produced a debility, and perhaps a debilitating putrid diathesis.

That, however, the miliary eruption is not necessarily or even generally connected with a certain state of debility, is abundantly evident from its being entirely wanting in by much the greater number of instances of typhoid fever, and in a variety of other diseases where every possible degree of debility occurs: And that it is not connected with any certain state of debility, still farther appears, both from the condition of those affected with it in different instances, which in point of strength is very various; and likewise from the continuance of fresh eruptions with the same individual, although during that time in very different states with respect to debility. It appears, therefore, much more probable, that it depends on some peculiar state of the surface, induced by the concurring influence of certain predisposing and occasional causes.

It appears so clearly that this eruption is always a symptomatic and factitious affection, that Dr Cullen is persuaded it may be, in most cases, prevented merely by avoiding sweats. Spontaneous sweatings, in the beginning of diseases, are very rarely critical; and all sweatings not evidently critical, should be prevented, or at least moderated; and the promoting them, by increasing external heat, is commonly very pernicious. Even critical sweats should hardly be encouraged by such means. If, therefore, spontaneous sweats arise, they are to be checked by the coolness of the chamber; by the lightness and looseness of the bed-cloaths; by the persons laying out their arms and hands; and by their taking cold drink: and in this way Dr Cullen thinks he has frequently prevented miliary eruptions, which were otherwise likely to have appeared, particularly in puerperal women.

But it may happen, when these precautions have been neglected, or from other circumstances, that a mi-

N° 206.

liary eruption does actually appear; and the question will then be put, how the case is to be treated? This is a question of consequence; as there is reason to believe that the matter here generated is often of a virulent kind; it is often the offspring of putrescency; and, when treated by increasing the external heat of the body, it seems to acquire a virulence which produces those symptoms mentioned above, and proves certainly fatal.

It has been an unhappy opinion with most physicians, that eruptive diseases were ready to be hurt by cold; and that it was therefore necessary to cover up the body very closely, and thereby increase the external heat. We now know that this is a mistaken opinion; that increasing the external heat of the body is very generally mischievous; and that several eruptions not only admit, but require the application of cold air. Dr Cullen is persuaded, therefore, that the practice which formerly prevailed in the case of miliary eruptions, of covering up the body closely, and both by external means and internal remedies encouraging the sweatings which accompany this eruption, was highly pernicious, and commonly fatal. He is therefore of opinion, that even when a miliary eruption has appeared, in all cases in which the sweating is not manifestly critical, we should employ all the means of stopping the sweating that are mentioned above; and he has sometimes had occasion to observe, that even the admission of cool air was safe and useful.

This is, in general, the treatment of miliary eruptions: but at the same time, the remedies suited to the primary disease are to be employed; and therefore, when the eruption happens to accompany inflammatory affections, and the fulness and hardness of the pulse or other symptoms show an inflammatory state present, the case is to be treated by blood-letting, purging, and other antiphlogistic remedies.

Upon the other hand, when the miliary eruption attends diseases, in which debility and putrescency prevail, it will be proper to avoid all evacuations, and to employ tonic and antiseptic remedies, particularly the Peruvian bark, cold drink, and cold air.

The most distressing circumstance attending this affection, is the almost unsupportable sickness at stomach which frequently occurs, and which is often observed to precede fresh eruptions taking place during the course of the disease. With the view of counteracting and alleviating this symptom, recourse is had to wine and other cordial medicines. But with many patients nothing is found to have so much influence as the use of camphor, particularly when introduced gradually in small doses, under the form of the *mistura camphorata* of the London pharmacopœia, or of the *emulsio camphorata* of that of Edinburgh.

We shall conclude this subject with observing, that the venerable octogenarian practitioner, de Fischer, when treating of this subject, in laying down the indications of cure, has given this as one of them: "Excretionis periphericæ non primariam habere rationem."

GENUS XXXII. SCARLATINA.

SCARLET FEVER.

Scarlatina, *Sauv.* gen. 98. *Vog.* 39. *Sag.* 294.
Junc. 75.

Sp. I.

Exanthe-
mata

Sp. I. The Mild SCARLET FEVER.

Scarlatina febris, *Sauv.* sp. 1. *Sydenham*, sect. vi. cap. 2.Sp. II. The SCARLET FEVER with *Ulcerated Sore Throat*.Scarlatina anginosa. *Withering* on the Scarlet Fever.

THE mild scarlet fever is described by Sydenham, who tells us that he can scarce account it a disease; and indeed nothing more seems to be necessary in the treatment of it than an antiphlogistic regimen, avoiding the application of cold air and cold drink. The disease however sometimes rages epidemically, and is attended with very alarming symptoms, bearing no small resemblance to the cynanche maligna, in which case it is called *scarlatina anginosa*.—The best description of this distemper has been published by Dr Withering in the year 1778. This disease made its appearance, we are told, at Birmingham and the neighbouring villages, about the middle of May 1778. It continued in all its force and frequency to the end of October; varying, however, in some of its symptoms, as the air grew colder. In the beginning of November it was rarely met with; but towards the middle of that month, when the air became warmer, it increased again, and in some measure resumed those appearances it possessed in the summer-months, but which it had lost during the cold winds in October.

It affected children more than adults; but seldom occurred in the former under two years of age, or in the latter if they had passed their fiftieth year.

Description. With various general symptoms of fever, the patient at first complains of a dejection of spirits, a slight soreness or rather stiffness in the neck, with a sense of straitness in the muscles of the neck and shoulders, as if they were bound with cords. The second day of the fever this soreness in the throat increases, and the patients find a difficulty in swallowing; but the difficulty seems less occasioned by the pain excited in the attempt, or by the straitness of the passage, than by an inability to throw the necessary muscles in action. The skin feels hot and dry, but not hard; and the patients experience frequent, small, pungent pains, as if touched with the point of a needle. The breath is hot and burning to the lips, and thirst makes them wish to drink; but the tendency to sickness, and the exertions necessary in deglutition, are so unpleasant, that they seldom care to drink much at a time. They have much uneasiness also from want of rest during the night. In the morning of the third day, the face, neck, and breast, appear redder than usual: in a few hours this redness becomes universal; and increases to such a degree of intensity, that the face, body, and limbs, resemble a boiled lobster in colour, and are evidently swollen. Upon pressure the redness vanishes, but soon returns again. The skin is smooth to the touch, nor is there the least appearance of pimples or pustules. The eyes and nostrils partake more or less of the general redness; and in proportion to the intensity of this colour in the eyes, the tendency to delirium prevails.

VOL. XI. Part I.

Things continue in nearly this state for two or three days longer, when the intense scarlet gradually abates, a brown colour succeeds, and the skin becoming rough, peels off in small scales. The tumefaction subsides at the same time, and the patients gradually recover their strength and appetite.

During the whole course of the disease, the pulse is quick, small, and uncommonly feeble; the urine small in quantity; the sub-maxillary glands somewhat enlarged and painful to the touch. The velum pendulum palati, the uvula, the tonsils, and gullet, as far as the eye can reach, partake of the general redness and tumefaction; but although collections of thick mucus, greatly resembling the specks or sloughs in the putrid sore throat, sometimes occur, yet those are easily washed off, and real ulcerations of those parts were never observed.

These are the most usual appearances of this disorder; but it too frequently assumes a much more fatal form. In some children the delirium commences in a few hours after the first attack; the skin is intensely hot; the scarlet colour appears on the first or second day, and they die very early on the third. Others again, who survive this rapid termination, instead of recovering, as is usual, about the time the skin begins to get its natural colour, fall into a kind of lingering, and die at last in the course of six or eight weeks.

In adults, circular livid spots were frequently observed about the breast, knees, and elbows; also large blotches of red, and others of white intermixed, and often changing places.

In the month of October, when the air becomes colder, the scarlet colour of the skin was both less frequent and less permanent. Many patients had no appearance of it at all; whilst others, especially adults, had a few minute red pimples, crowned with white pellucid heads. The inside of the throat was considerably tumefied; its colour a dull red, sometimes tending to a livid. The pulse beat in general 130 or 140 strokes in a minute; was small, but hard, and sometimes sufficiently so to justify the opening of a vein; and the blood thus taken away, in every instance when cool, appeared fizy, and the whole crassamentum firm.

Happy would it be, Dr Withering observes, if the baneful influence of this disorder terminated with the febrile symptoms. But in ten or fifteen days from the cessation of the fever, and when a complete recovery might be expected, another train of symptoms occur, which at last frequently terminate fatally. The patients, after a few days amendment, feel a something that prevents their farther approach to health; an unaccountable languor and debility prevails, a stiffness in the limbs, an accelerated pulse, disturbed sleep, disrelish to food, and a scarcity of urine. These symptoms, we are told, are soon succeeded by swellings of a real dropical nature, forming sometimes an anasarca, and on other occasions an ascites; and not unfrequently scarlatina has proved fatal, from supervening hydrothorax in consequence of the effusion of water into the chest. It is unnecessary to remark, that when this happens, a fatal termination is more sudden than from any other modification of dropy.

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Exanthemata

Dr Withering, after examining the accounts given of this disease by different authors, proceeds to the diagnosis. It may be distinguished, he observes, from the petechial fever, by the eruption in the latter appearing seldom before the fourth day, by the regularity and distinctness of the spots, and by its principally occupying the neck, the back, and the loins. On the other hand, in the scarlet fever, the eruption generally appears about the third day; consists either of broad blotches, or else one continued redness, which spreads over the face and the whole body.

In the fever called *purpura*, the pustules are prominent, keep their colour under pressure, and never appear early in the disease; whereas in the scarlet fever, the eruption appears more early, is not prominent, but perfectly smooth to the touch, and becomes quite white under pressure.

Although the *purple fever* and *scarlatina* may be connected by some general cause, yet our author takes occasion to observe, that they cannot be mere modifications of the same eruption: for examples occur, he says, of the same person being first seized with one of these disorders, and afterwards with the other; but he never met with an instance of the same person having the scarlet fever twice; and he believes it to be as great an improbability as a repetition of the small-pox.

This disorder is particularly distinguished from the *measles*, we are told, by the want of that cough, watery eye, and running at the nose, which are known to be the predominant symptoms in the early state of the measles, but are never known to exist in the scarlatina.

From the *erysipelas* this disease is distinguishable, by the limited seat of the former, together with its not being contagious.

The *ulcerated sore throat*, however, is more difficult to distinguish from this disease than any other; and yet the distinction is a matter of the greatest importance, as the method of treatment, according to Dr Withering, ought to be extremely different.—But although, in a number of circumstances, these two diseases bear a very great resemblance, yet, with a little attention, the one may in general, he thinks, be distinguished from the other. From Dr Fothergill's account of the sore throat attended with ulcers, our author has made out the following characteristic circumstances of the two diseases, contrasted to one another.

Scarlatina Anginosa.
Season. . Summer . . Autumn.
Air. . Hot . . Dry.
Places. High . . Dry . . . Gravelly.
Subjects. Vigorous. Both sexes alike. . Robust in most danger. . . .
Skin. Full scarlet smooth . . If pimply, the pimples white at the top . . Always dry and hot.

Angina Gangrenosa.
Season. . Spring . . Winter.
Air. . Warm . . Moist.
Places. Close . . Low . . Damp. . Marshy.
Subjects. Delicate . . Women and female children. Robust adults not in danger.
Skin. Red tinge . . pimply. . The pimples redder than the interstices . . bedewed with sweat towards morning.

Scarlatina Anginosa.

Eyes. Shining, equable, intense redness, rarely watery.

Throat. In summer, tonsils, &c. little tumefied; no slough . . In autumn, more swelled. Integuments separating . . Sloughs white.

Breath. Very hot, but not fetid.

Voice. In summer, natural.

Bowels. Regular at the accession.

Blood. Buffy. . Firm.

Termination. The 3d, 5th, 8th, or 11th day.

Nature. Inflammatory.

Angina Gangrenosa. *Scarlatina.*

Eyes. Inflamed and watery, or sunk and dead.

Throat. Tonsils, &c. considerably swelled and ulcerated . . . Sloughs dark brown.

Breath. Offensive to the patients and assistants.

Voice. Flat and rattling.

Bowels. . Purging at the accession.

Blood. . Florid . . Tender.

Termination. No stated period.

Nature. Putrid.

It is not pretended, Dr Withering remarks, that all the above contrasted symptoms will be met with in every case. It is enough, he observes, that some of them appear; and that if conjoined with the consideration of the prevailing constitution, they enable us to direct that mode of treatment which will most contribute to the relief of the sick.

But notwithstanding the attention which Dr Withering has bestowed upon this subject, we are still inclined to think, that the disease which he has so accurately described under the title of *scarlatina anginosa*, is in reality the same affection with the malignant ulcerous sore throat of Huxham and Fothergill. During different epidemics, this disease, like small-pox and measles in different seasons, is considerably varied in its appearance. But still there occurs such a similarity as clearly marks the sameness of the affection. And indeed this, as in the case of the small-pox, is abundantly demonstrated, by infection from one contagion giving protection against succeeding ones, although the appearances be much varied. This has particularly appeared at Edinburgh, where the disease has of late prevailed as an epidemic on three different years, viz. 1774-5, 1782-3, and 1789-90. During the first of these, in the greater part of patients, the sore throats were of a very gangrenous and malignant nature: during the second, the disease more commonly appeared under the form of what might be called *simple scarlatina*: and during the third epidemic, the contagion was, if we may be allowed the expression, of an intermediate nature. But it is farther to be remarked, that during every one of those epidemics, when several children of a family were at the same time subjected to the infection, in one the disease would have been attended with almost all the symptoms mentioned in the column of *scarlatina anginosa*, with respect to skin, eyes, throat, breath, bowels, termination of the affections, &c. In another, would have occurred all the symptoms with respect to those particulars which he has mentioned under the column of *angina gangrenosa*. While at the same time, in numberless instances, even in the same patient, the disease at its commencement has shown evident marks of an inflammatory, and at its termination of a putrid tendency. And there cannot be a doubt, that both the *scarlatina anginosa*,

Exanthemata

anginosa, and angina gangrenosa, as described by Forthergill and Huxham, have occurred in every season and situation, and have affected persons of every age and constitution not before subjected to either disease.

Causes. Dr Withering affirms, that the immediate cause of this disease is a poison of a peculiar kind, communicable by contagion.

2. That this poison first takes possession of the mucous membrane lining the fauces and the nose; and either by its action upon the secretory glands, or upon the mucus itself, assimilates that mucus to its own nature.

3. That it is from this beginning, and from this only, that it spreads to the stomach, &c. and at length acts upon the system at large.

4. That its first action upon the nerves is of a sedative or debilitating nature.

5. That in consequence of certain laws of the nervous system, when the debilitating effects operate upon the sensorium commune, a reaction takes place; and that this reaction is, *ceteris paribus*, proportioned to the debilitating power.

6. That, in consequence of this reaction of the nervous system, the vibratory motion of the capillary blood-vessels dependent thereon is greatly increased; an unusually large quantity of blood is accumulated in those vessels; the heart and large blood-vessels are deprived of their customary proportion; and hence, though stimulated to more frequent contraction, the pulse must necessarily be feeble.

7. That as violent exertions are followed by debility, upon the cessation of the fever, the capillary vessels, which had acted with such unusual violence, are left in a state of extreme debility, and are long in recovering their tone; hence it is that so many patients afterwards become dropical.

Dr Withering next proceeds to the consideration of the different remedies, which either are at present in common use or have been recommended as proper in this disease.

Cure. Blood-letting has been recommended by authors; but such was the state of the pulse in this disorder, at least during the summer-months, that it was not in any instance thought advisable to take away blood. In some cases, indeed, where the fiery redness of the eyes seemed to demand the use of leeches, they were had recourse to, but never with any advantage. In the harvest months, when the pulse was more firm, and when suffocation seemed to be threatened from the swelling in the fauces, blood-letting was sometimes advised; but still with less advantage than one would have expected in almost any other situation.

Vomiting. This, our author observes, seems to be the remedy of nature; and he is surprised how it should have been omitted by several authors who have gone before him. Vomiting, he says, most amply fulfils the indications arising both from a consideration of the cause and of the effects; and a liberal use of the remedy he holds forth as the true foundation for successful practice in scarlet fever and sore throat. His common form of emetic is a combination of tartar emetic and ipecacuanha, given in pretty smart doses;

and these are to be repeated at least once in 48 hours, and in the worst cases so often as twice in 24 hours.

Purgings. The action of purgatives is considered by Dr Withering as altogether repugnant to the curative indications in this disease: for the poisons, as formerly remarked, being received into the system by the fauces, the operation of a purge, instead of discharging it, can only promote its diffusion along the alimentary canal; and in fact, we are told, that when even a spontaneous purging supervenes in this disease, the patients sink so amazingly fast, that it is not within the reach of art to support them. When, however, a considerable quantity of acrid matter passing from the fauces into the stomach, makes its way to the rectum, a considerable degree of looseness often takes place. And although evacuations from the system in general by means of cathartics may be hurtful, yet patients often obtain great relief from a free discharge of this matter; and by discharging it, purgatives have the effect even of preventing an evacuation from the system, which would otherwise take place.

Sudorifics. Cordials. Alexipharmics. None of these remedies were found beneficial. With respect to cordials, Dr Withering observes, that altho' they seem to be indicated by the great loss of strength and feeble pulse, yet the certain consequence of their use always was, an increase of restlessness, of the delirium, and of the heat.

Diuretics. These were found very beneficial. The vegetable fixed alkali is recommended as the most proper article of this kind: a dram or two may be easily swallowed every 24 hours, by giving a small quantity in every thing the patient drinks. Diuretics, however, have been found principally serviceable by practitioners in general in those cases where the urine is observed to be scanty, and where dropical symptoms have taken place.

Peruvian bark. No medicine, we are told, ever had a fairer trial in any disease than the Peruvian bark had in this epidemic; for the feeble pulse, great prostration of strength, with here and there a livid spot, were thought to be such undeniable evidences of a putrid tendency, that the bark was poured down not with a sparing hand. But this was only at first; for these livid spots and the sloughs in the throat being found to be the effects of inflammation instead of putrefaction, and the bark instead of diminishing, rather increasing these symptoms, it was at last entirely laid aside by Dr Withering in his practice. But although Peruvian bark may not have been successful with a particular epidemic at a particular place; yet from the concurring testimony of many practitioners, it is very commonly found to be productive of good effects: And there is perhaps no remedy in which greater dependence is in general put, particularly in the advanced periods of the disease, where the factor is considerable.

Upon the same principles that the bark was prescribed, fixable air was at first likewise advised, but with no evident effects either one way or another. Dulcified acids were also had recourse to, but with no advantage.

Opiates. These, although recommended by some authors

Eranthe-
mata

authors for the removal of inquietude and watchfulness, yet in this epidemic, instead of effecting these purposes, always increased the distress of the patient.

Blister.] In the summer appearance of the disease, blisters were universally detrimental; they never failed to hasten the delirium; and if the case was of the worst kind, they too often confirmed its fatal tendency. But although this may have been the case during the epidemic which Dr Withering describes, it has by no means been generally observed. On the contrary, by the early application of blisters to the external fauces, both the glandular swellings and likewise the discharge from the mouth and fauces have been much diminished; and practitioners have believed, not without probable reason, that the after affections of the throat were less considerable than would otherwise have been the case. Dr Withering allows, that in the autumnal season, when the inflammation was less generally diffused through the body, they were less detrimental; but he thinks that they did not here produce any beneficial effects.

Injected gargles of contrayerva decoction, sweetened with oxymel of squills, &c. were found very beneficial in bringing always large quantities of viscid ropy stuff from the fauces.

The immersion of the feet and legs in warm water, although it did no harm, yet did not either procure sleep or abate the delirium, as it frequently does in other kinds of fever.

As in summer it was found difficult to keep the patients sufficiently cool, they were ordered to lie upon a mattress instead of a feather-bed; a free circulation of air was kept up; and where the patient's strength would admit of it, they were ordered frequently out of doors. Animal food and fermented liquors were denied them, and nothing allowed but tea, coffee, chocolate, milk and water, gruel, barley-water, and such articles.

With respect to the dropical disorder which so frequently succeeds to this complaint, it was never observed, Dr Withering remarks, when the preceding symptoms had been properly treated.

When called upon to patients in the dropical state, he began his practice by a dose of calomel at night, and a purgative in the morning. When a febrile pulse attended the other symptoms, emetics were useful, as well as the saline draughts and other neutral salts. When great debility, comatose or peripneumonic symptoms occurred, blisters were found very serviceable: but when dropical symptoms were the principal cause of complaint, small doses of rhubarb and calomel were advised; recourse was also had to diluted solutions of fixed alkalies, squills, Seltzer waters, and other diuretics.

When the urine flows freely, steel and other tonics are recommended; together with gentle exercise, high-seasoned food, wine, and the wearing of flannel in contact with the skin.

Dr Withering concludes his essay with an enumeration of several cases, treated according to the principles above laid down. The successful termination of these cases demonstrates the propriety of the practice which he has recommended; at least for the epidemic under the form in which it then appeared.

Genus XXXIII. URTICARIA, NETTLE-RASH.

Febris urticata, *Kog.* 40.

Uredo, *Lin.* 8.

Purpura urticata, *Junc.* 75.

Scarlatina urticata, *Sauv.* sp. 2.

Erysipelatis species altera, *Sydenham*, sect. vi. cap. 6.

Febris scarlatina, et febris urticata, *Meyser*, *Mal. des armées*, 291 et seq.

Description. This disease has its English name from the resemblance of its eruption to that made by the stinging of nettles. These little elevations upon the skin in the nettle-rash often appear instantaneously, especially if the skin be rubbed or scratched, and seldom stay many hours in the same place, and sometimes not many minutes. No part of the body is exempt from them; and where many of them rise together, and continue an hour or two, the parts are often considerably swelled; which particularly happens in the face, arms, and hands. These eruptions will continue to infest the skin, sometimes in one place and sometimes in another, for one or two hours at a time, two or three times every day, or perhaps for the greatest part of the 24 hours.—In some persons they last only a few days, in others many months; nay, sometimes the disease has lasted for years with very short intervals.

But though the eruption of the urticaria resembles, as already observed, that produced by the stinging of nettles, it is sometimes accompanied with long wheals, as if the part had been struck with a whip. Whatever be the shape of these eminences, they always appear solid, without having any cavity or head containing either water or any other liquor: and this affords an easy mark whereby this disease may be distinguished from the itch. For it often happens, that the insufferable itching with which this eruption is attended, provokes the patient to scratch the parts so violently, that a small part of the cuticle on the top of these little tumors is rubbed off; a little scab succeeds; and, when the swelling is gone down, there is left an appearance hardly to be distinguished from the itch, but by the circumstance just now mentioned. The nettle-rash also further differs from the itch, in not being infectious.

Causes, &c. Dr Heberden is inclined to ascribe this distemper to some mechanical cause outwardly applied to the skin. He observes, that most people suffer in a similar manner from the real stinging of nettles. Cowhage, or, as it is corruptly called, *cow-itch*, a sort of phaseolus, or French bean, the pod of which is covered over with a kind of down or hair, and the effect of which upon the skin is much the same as that of nettles; and almost any hairs cut equally short, and sprinkled upon the skin, whenever they happen to stick in it, will make the part itch or smart in such a manner as to give great uneasiness; it is also a considerable time before the skin can be cleared of the finer ones, when once they are strewed upon it.

Reaumur, in the fourth memoir of his History of Insects, describes a species of caterpillars to which belong

Exanthemata

long a sort of hairs almost invisable to the naked eye, which are easily detached, and frequently float in the air round their nest, though it have not been at all disturbed. The touch of these hairs has a similar effect with the cow-itch; that is, they occasion intolerable itchings, with little bumps and redness, arising sometimes to a slight inflammation. These he found would continue four or five days, if the animal or the nest had been much handled; and though they had not been touched at all, yet, by only walking near their nests, the same effects would be brought on, but for a shorter time. These hairs affect the skin in this manner by sticking in it, as he could perceive with a glass of a great magnifying power; for with one of a small power they were not visible. The uneasy sensations caused by these small wounds, not only, as he says, last several days, but move from one part of the body to another; so that they will cease upon one wrist, and immediately begin on the other; from the wrist they will go to the fingers or the face, or even to the parts of the body which are covered. He supposes, that the motions of the body, when much of this fine down lies near or upon the skin, may drive it from one part to another, or change what was lying there inoffensively to a situation fit to make it penetrate into the skin. Neither cold water, nor oil, nor spirit of wine, with which the parts affected were bathed, had any effect in removing the itching. He thinks the most efficacious remedy which he tried for this complaint was, to rub the parts strongly with parsley, which instantly lessened the sensations, and after two or three hours, entirely freed the patient from them. It is also well known, that many species of caterpillars, by only walking over the hands, will produce something like this effect on the parts which they touch, and undoubtedly from the same cause.

Dr Heberden asks, Is it impossible that the nettle-rash should arise from the same causes, or from others similar, which we miss by looking too deeply for them in the blood and humours? Such (says he) may have been its origin in some instances, where it has lasted only a few days; but where this affection has continued for some years, in persons who change their linen every day, and who bathe frequently all the time, it can hardly be ascribed to such an external cause. He has observed it frequently to arise from cantharides: but though it has continued many weeks after the removal of the blister, yet it might be suspected that this arose from the fine spiculae of the cantharides sticking all this time about the skin; it being customary to strew much of the dry powder of the cantharides over the blister-plaster, whence it may readily be carried to other parts of the body. But it is certain that similar effects will sometimes follow the internal use of wild valerian root, or the eating of fish not sufficiently dressed; muscles, shrimps, and even honey, and the kernels of fruits, will also sometimes produce symptoms of a similar kind. But whatever be its cause, Dr Heberden never saw any reason to suppose that the nettle-rash had in any way vitiated the humours to such a degree as to require the use of internal remedies; and if the itching could be certainly and expeditiously allayed, there would be no occasion for any farther cure. He concludes this

history of the disorder with a case communicated to him by Dr Monsey, physician of Chelsea-college, and in which the disease appeared with uncommon violence.

W. A. aged near 30, of a thin spare habit, was seized with a disorder attended with symptoms of a very uncommon kind. Whenever he went into the air, if the sun shined bright, he was seized with a tickling of his flesh on those parts exposed to the sun: this tickling, by his continuing in the air, increased to a violent itching, attended with great heat and pain: the skin would then be almost as red as vermilion, and thicken like leather; and this remained till he went out of the open air, and then abated in about 15 or 20 minutes. This happened only when the sun was above the horizon; at other times he was what he called *quite well*.—But it was not owing to the heat of the sun; for the sun in winter affected him full as much, if not more, and the heat of the fire had no such effect. Thus he was confined to the house for 10 years. He tried several hospitals, and had advices from many physicians, without the least abatement of his complaints. At last it was agreed by a consultation of physicians, that he should try dipping in salt-water; which he did at Yarmouth for 13 weeks, without any visible amendment. One hot day, having pulled off his clothes and gone into the sea in the middle of the day, the heat diffused itself so violently all over his body, that, by the time he had put on his clothes, his eye-sight began to fail, and he was compelled to lie down upon the ground to save himself from falling. The moment he lay down, the faintness went off: upon this he got up again; but had no sooner arisen, than he found himself in the former condition: he therefore lay down again, and immediately recovered. He continued alternately getting up and lying down, till the disorder began to be exhausted, which was in about half an hour; and he was frequently obliged to have recourse to the same expedient.

Having at last accidentally met with Dr Monsey, this physician questioned him concerning the cause of the disorder; but nothing could be guessed at, excepting that the patient owned he had one winter lived entirely upon bullock's liver and porter, from inability to purchase better victuals. A comrade lived with him at that time, on the same provisions; and he also was affected in a similar manner, though in a less degree, and had recovered. This patient was then first put upon a course of Dover's sweating powder without any effect, and afterwards tried a course of nitrous ones with the same bad success. At last Dr Monsey determined to try the effect of mercury, which happily proved effectual in removing this obstinate and uncommon distemper. The patient began with taking five grains of calomel for three nights running, and a cathartic next morning. In this course he went on for near a fortnight, at the end of which he found himself very sensibly relieved. This encouraged him to go on rather too boldly, by which means a slight salivation ensued; however, that went off soon, and in about six weeks he was quite well.—Some time after, he was threatened with a return of his disorder; but this was effectually relieved by a dose of calomel, which he had afterwards occasion to repeat for the same reason, and with the same success.

Urticaria.

Exanthemata

success; but at last the disorder seemed to be radically cured, by his having no further symptoms of a relapse.

Genus XXXIV. PEMPHIGUS.

232

Pemphigus, Sauv. gen. 93. Sag. 291.

Morta, Lin. 1.

Febris bullosa, Vog. 41.

Pemphigus major, Sauv. sp. 1.

Exanthemata serosa, C. Pison. Obs. 150.

Febris pemphygodes, *Ephem. Germ.* D. I. A. viii. Obs. 56.

Pemphigus castrensis, Sauv. sp. 2.

Febres syneches, cum vesiculis per pectus et collum sparitis, *Morton.* App. ad Exerc. II.

Pemphigus Helveticus, Sauv. sp. 3. *Langhans* in Act. Helvet. vol. ii. p. 260. et in *Beschreibung des Siementhals*, Zurich 1753.

THIS is a very rare disease, insomuch that Dr Cullen declares he never saw it. He declines taking the descriptions of foreign physicians; we shall therefore content ourselves with giving an instance of this very uncommon distemper, as it was observed in the infirmary at Aberdeen, and was treated by the late Dr David Stuart, then physician to that hospital, who soon after published an account of it in the Edinburgh Medical Commentaries. A private soldier of the 73d regiment, aged eighteen years, formerly a pedlar, and naturally of a healthy constitution, was received into the hospital at Aberdeen on the 25th of April. About twenty days before that, he had been seized with the measles when in the country; and, in marching to town, on the second day of their eruption, he was exposed to cold; upon which they suddenly disappeared.

Having arrived at Aberdeen, he was quartered in a damp, ill-aired, under ground apartment. He then complained of sickness at stomach, great oppression about the præcordia, head-ach, lassitude, and weariness, on the least exertion; with stiffness and rigidity of his knees and other joints. The surgeon of the regiment visited him: he was purged, but with little benefit. About ten days before, he observed on the inside of his thighs a number of very small, distinct, red spots, a little elevated above the surface of the skin, and much resembling the first appearance of small-pox. This eruption gradually spread itself over his whole body, and the pustules continued every day to increase in size.

Upon being received into the hospital, he complained of head-ach, sickness at stomach, oppression about the præcordia, thirst, sore throat, with difficulty of swallowing; his tongue was foul, his skin felt hot and feverish; pulse from 110 to 120, rather depressed; belly costive; eyes dull and languid, but without delirium. The whole surface of his skin was interspersed with vesicles, or phlyctænæ, of the size of an ordinary walnut; many of them were larger, especially on the arms and breast. In the interstices, between the vesicles, the appearance of the skin was natural, nor was there any redness round their base; the distance from one to another was from half an inch to a handbreadth or more. In some places two or three were joined together, like the pustules in the confluent small-pox. A few vesicles had burst of themselves, and form-

ed a whitish scab or crust. These were mostly on the neck and face; others showed a tolerably laudable pus. However, by far the greatest number were perfectly entire, turgid, and of a bluish colour. Upon opening them, it was evident that the cuticle elevated above the cutis, and distended with a thin, yellowish, semipellucid serum, formed this appearance. Nor was the surface of the cutis ulcerated or livid; but of a red florid colour, as when the cuticle is separated by a blister, or superficial burning. No other person laboured under a similar disease, either in the part of the country from which he came, or when he resided in Aberdeen.

This case was treated in the following manner. The largest of the vesicles were snipped, and dressed with unguent. e lap. calaminari. In the evening he was vomited with a solution of tartar emetic, given in small quantities and at intervals. This also procured two loose stools. And he was ordered for drink, water-gruel acidulated with lemon-juice.

"April 16. He still complained of sickness, some oppression about his breast, and sore throat; he had slept little during the night; his tongue was foul and blackish; his skin, however, was not so hot as the preceding day; his urine was high-coloured, but had the appearance of separation; his pulse 90, and soft; most of the sores on the trunk of the body looked clean. Others, particularly where the vesicles were confluent, seemed beginning to ulcerate, and to have a bluish sub-livid appearance. They were dressed afresh with cerate, and he was ordered the following medicines:

R. Decoct. Cort. Peruvian. ʒvi. Vini rubr. Lusitan. ʒiii. M. Hujus mixturæ capiat ʒß. tertia quaque hora.

"His acidulated drink was continued; and on account of the very offensive smell on approaching near him, some vinegar was placed in a basin before the bed, and sprinkled on the floor; and the room was kept properly aired.

"April 17. His sores looked tolerably clean, unless on his arms and thighs; where they were livid, a little ulcerated, and discharged a bloody ichor.

"His headach, sickness, &c. were mostly gone; his tongue was rather cleaner; pulse 68, and soft. As the decoction of the bark sat easily on his stomach, the following prescription was ordered:

R. Pulv. subtiliss. Cort. Peruv. ʒß. Vini rubri Lusitan. Aquæ fontan. āā ʒß. M. ft. Haust. tertia quaque hora repetend.

The acidulated drink was continued, and fresh dressings applied to the sores.

"April 18. The little ulcers in his arms and thighs still discharged a bloody ichor, and looked ill; his other complaints were better; pulse 82. The bark had not nauseated him, and it was continued as well as his former drink.

"April 19. His sores looked much cleaner and better; the fever was gone, his pulse natural, and he had no complaint but weakness and a troublesome itching of the skin: The Peruvian bark, &c. were continued.

"April 20. Some of the ulcers still poured forth a bloody ichor; most of them, however, looked well, and had begun to heal—fever gone—medicines continued.

"From the 21st of April, he went on gaining strength, and his sores appeared to heal fast; he was desired to take

Exanthemata

take only four doses every day; and by the 27th his sores, &c. were totally dried up—he had no complaint, and was dismissed cured.”

Since the publication of this case of pemphigus by Dr Stuart, observations on this disease have been published by Dr Stephen Dickson of Dublin in the Transactions of the Royal Irish Academy. In these observations, an account is given of six different cases which Dr Dickson has had an opportunity of seeing. Judging from these, Dr Dickson thinks that Dr Cullen's definition of this disease requires correction; and that it ought to be defined, “a fever accompanied with the successive eruption, from different parts of the body, internal as well as external, of vesicles about the size of an almond, which become turgid with a faintly yellowish serum, and in three or four days subside.”

From the cases which have fallen under Dr Dickson's observation, he concludes, that the disease varies considerably as to its mildness or malignity. In three of the cases which he has seen, the symptoms were extremely mild, but in the other three strong symptoms of putrescency were manifested, and the life of the patient was in great danger. With respect to the method of cure, he is of opinion, that the general symptoms of weakness, and tendency to putrefaction, obviously point out the proper treatment. Nourishment must be supplied, and the Peruvian bark and wine carefully administered; and when vesicles appear on internal parts, irritation must be guarded against by opiates, demulcents, and gentle laxatives.

Some additional observations on the subject of pemphigus have lately been published in the London Medical Journal by Mr Thomas Christie. From a case which Mr Christie describes, he is disposed to agree with Dr Dickson in thinking that sometimes at least pemphigus is not contagious. He remarks, however, that the pemphigus described by some foreign writers was extremely infectious; which he thinks this may lead to a division of the disease into the two species, the pemphigus simplex and complicatus; both of which, but especially the last, seem to vary much with respect to mildness and malignity.

GENUS XXXV. APHTHA.

The THRUSH.

233

Aphtha, *Sauv.* gen. 100. *Lin.* 9. *Sag.* 298. *Boerb.* 978. *Hoffm.* II. 478. *Junck.* 137. *Febris aphthosa, Vog.* 44.

The only idiopathic species is the thrush to which infants are subject; (*Aphtha lactucimen, Sauv.* sp. 1.)

The aphthæ are whitish or ash-coloured pustules, invading the uvula, fauces, palate, tonsils, inside of the cheeks, gums, tongue, and lips. They for the most part begin at the uvula, sending forth a glutinous mucus, and the pustules covering all or the greatest number of the parts above-mentioned with a thick whitish crust adhering most tenaciously. This crust does not induce an eschar on the parts on which it lies by eating into them, but comes off in whole pieces after the pustules have arrived at maturity. This will often happen in a short time, so that the throat and internal parts of the mouth are frequently observed to be clean which a few years before were wholly covered with white crusts. Neither is this disease confined

to the throat and fauces, but is said to affect the œsophagus, stomach, and all parts of the alimentary canal. Of this indeed there is no other proof, than that, after a great difficulty of swallowing, there is sometimes an immense quantity of aphthæ evacuated by stool and vomiting, such as the mouth could not be thought capable of containing.

Causes, &c. The aphthæ fever seems to be produced by cold and moisture, as it is found only in the northern countries, and especially in marshy places; and in them the aphthæ often appear without any fever at all.

Prognosis. There is no symptom by which the coming out of aphthæ can be foretold, tho' they are common in many fevers; but they themselves are in general a bad symptom, and always signify a very tedious disorder: the danger denoted by them is in proportion to the difficulty of deglutition; and a diarrhœa accompanying them is likewise bad. This indeed generally carries off old people when they become affected with aphthæ. The dark-coloured aphthæ also are much more dangerous than such as are of a brown or ash colour; but it is a good sign when the appetite returns, and the dark-coloured ones are succeeded by others of a whiter colour. Neither are those which are unaccompanied with fever so dangerous as the other kind.

Cure. As the aphthæ are seldom a primary disease, we must generally endeavour to remove the disorder upon which they depend, after which they will fall off; but in the mean time we are not to neglect applications to the aphthæ themselves, such as detergent and softening gargles made of the decoction of figs, with the addition of honey of roses, a little vinegar, and some tincture of myrrh.

ORDER IV. HÆMORRHAGIÆ.

HÆMORRHAGIES.

234

Hæmorrhagiæ, *Vog.* Class II. Ord. I. *Hoffm.* II. 194. *Junck.* 5.

Sanguifluxus, *Sauv.* Class IX. Ord. I. *Sag.* Class V. Order I.

Genus XXXVI. EPISTAXIS.

BLEEDING at the NOSE.

235

Hæmorrhagia, *Sauv.* gen. 239. *Lin.* 173. *Sag.* gen. 174.

Hæmorrhagia narium, *Hoffm.* II. 196. *Junck.* 6.

Hæmorrhagia plethorica, *Sauv.* sp. 2. *Hoffm.* II. 198.

The other species enumerated by authors are all symptomatic.

Description. The milder species of this hæmorrhagy comes on more frequently in summer than in winter, and for the most part without giving any warning, or being attended with any inconvenience; but the less benign kind is preceded by several remarkable symptoms. These are, congestions of the blood sometimes in one part and sometimes in another, and which are often very troublesome in the sides of the head; there is a redness of the cheeks; an inflation of the face, and of the vessels of the neck and temples; a *tininitus aurium*; a heavy pain of the eyes, with a pro-

minence

Hæmorrhagie

minence, dryness, and sparks; there is a vertiginous affection of the head, with an itching of the nostrils, and a sense of weight, especially about the root of the nose. In some the sleep is disturbed with dreams about blood, fire, &c. Frequently the belly is costive, there is a diminution of the quantity of urine, a suppression of sweat, coldness of the lower extremities, and tension of the hypochondria, especially the right one.

Causes, &c. This hæmorrhagy may occur at any time of life; but most commonly happens to young persons, owing to the peculiar state of the system at that time. Sometimes, however, it happens after the *ακμή* and during the state of manhood, at which time it is to be imputed to a plethoric state of the system; to a determination of the blood, by habit, to the vessels of the nose; or to the particular weakness of these vessels.

In all these cases the disease may be considered as an arterial hæmorrhagy, and depending upon an arterial plethora; but it sometimes occurs in the decline of life, and may then be considered as the sign of a venous plethora in the vessels of the head. It often happens at any period of life in certain febrile diseases, which are altogether or partly of an inflammatory nature, and which show a particular determination of the blood to the vessels of the head. As by this evacuation, other diseases are often removed, it may on these occasions be deemed truly *critical*. It happens to persons of every constitution and temperament; but most frequently to the plethoric and sanguine, and more commonly to men than women.

Prognosis. In young people, the bleeding at the nose may be considered as a slight disease, and scarce worth notice. But, even in young persons, when it recurs very frequently and in great quantity, it is alarming; and is to be considered as a mark of an arterial plethora, which in the decline of life may give the blood a determination to parts from which the hæmorrhagy would be more dangerous. And this will require more particular attention as the marks of plethora and congestion preceding the hæmorrhagy are more considerable, and as the flowing of the blood is attended with a more considerable degree of febrile disorder. These consequences are more especially to be dreaded, when the epistaxis happens to persons after their *ακμή*, returning frequently and violently. Even in the decline of life, however, it may be considered as in itself very salutary; but at the same time it is a mark of a dangerous state of the system, i. e. of a strong tendency to a venous plethora in the head, and it has accordingly been often followed by apoplexy, palsy, &c. When it happens in febrile diseases, and is in pretty large quantity, it may be generally considered as critical and salutary; but it is very apt to be too profuse, and thus becomes dangerous. It sometimes occurs during the eruptive fever of some exanthemata, and is in such cases sometimes salutary; but if these exanthemata be accompanied with any putrid disposition, this hæmorrhagy, as well as artificial blood-lettings, may have a very bad tendency.

Cure. The treatment in cases of epistaxis may be referred to two heads. 1st, The treatment during the time of the discharge; and, 2^{dly}, The treatment after the discharge is stopt, with the view of preventing the return of it. During the former of these periods, it

N^o 206.

is necessary in the first place to consider whether the discharge should be left to its natural course, or stopped by artificial means. In determining this question, regard must be paid to the quantity of the discharge; the appearance of the blood; the constitution with which epistaxis occurs; the former habit of the patient; and the consequences which result from the discharge. When, from due consideration of these circumstances, there is reason to fear that further evacuation would be attended with bad consequences, though this disease has been generally thought very slight, it should seldom be left to the conduct of nature; and in all cases it should be moderated by keeping the patient in cool air, by giving cold drink, by keeping the body and head erect, by avoiding any blowing of the nose, speaking, or other irritation; and if the blood has flowed for some time without showing any tendency to stop, we are to attempt the suppression of the hæmorrhagy, by pressing the nostril from which the blood flows, washing the face with cold water, or applying this to some other parts of the body. These measures Dr Cullen judges to be proper even on the first attacks, and in young persons where the disease is the least hazardous: but they will still be more requisite if the disease frequently recurs without any external violence; if the returns happen to persons disposed to a plethoric habit; and more particularly if the signs of plethora appear in the symptoms preceding the discharge.

When the bleeding is so profuse that the pulse becomes weak and the face pale, every means must be used to put a stop to it, and that whether the patient be young or old. Besides those methods abovementioned, we must use astringents both internal and external; but the latter are the most powerful, and the choice of these may be left to the surgeon. The internal astringents are either vegetable or fossil; but the vegetable astringents are seldom powerful in the cure of any hæmorrhagies except those of the alimentary canal. The fossil astringents are more active, but differ considerably in strength from one another.—The chalybeates appear to have little strength: the preparations of lead are more powerful; but cannot be employed, on account of their pernicious qualities, unless in cases of the utmost danger. The *tinctura saturnina*, or *antiphthifica*, is a medicine of very little efficacy, either from the small quantity of lead it contains, or from the particular state in which it is. The safest and at the same time the most powerful astringent seems to be alum.

For suppressing this and other hæmorrhages, many superstitious remedies and charms have been used, and said to have been employed with success. This has probably been owing to the mistake of the bystanders, who have supposed that the spontaneous cessation of the hæmorrhagy was owing to their remedy. At the same time Dr Cullen is of opinion, that such remedies have sometimes been useful, by impressing the mind with horror or dread. Opiates have sometimes proved successful in removing hæmorrhagies; and when the fulness and inflammatory diathesis of the system have been previously taken off by bleeding, they may, in Dr Cullen's opinion, be used with safety and advantage. Ligatures have been applied upon the limbs, for retarding the return of the venous blood

Hemor-
rhagiæ

from the extremities; but their use seems to be ambiguous. In the case of profuse hemorrhagies, no care is to be taken to prevent the patient from fainting, as this is often the most certain means of stopping them.

236

GENUS XXXVII. HÆMOPTYSIS.
SPITTING OF BLOOD.

Hæmoptysis, *Sauv.* gen. 240. *Lin.* 179. *Vog.* 84.

Sag. gen. 175. *Junck.* 8.

Hæmoptoe, *Boerb.* 1198.

Sanguinis fluxus ex pulmonibus, *Hoffm.* II. 202.

Sp. I. HÆMOPTYSIS from *Plethora*.

Sp. II. HÆMOPTYSIS, from *External Violence*.

Hæmoptysis accidentalis, *Sauv.* sp. 1.

Hæmoptysis habitualis, *Sauv.* sp. 2.

Hæmoptysis traumatica, *Sauv.* sp. 12.

Sp. III. HÆMOPTYSIS with *Pthipsis*.

Hæmoptysis phthisica, *Sauv.* sp. 9.

Hæmoptysis ex tuberculo pulmonum, *Sauv.* sp. 10.

Sp. IV. *The Calculous HÆMOPTYSIS.*

Hæmoptysis calculosa, *Sauv.* sp. 14.

Sp. V. *The Vicarious HÆMOPTYSIS.*

Hæmoptysis catamenialis, *Sauv.* sp. 4.

Hæmoptysis periodica, *Sauv.* sp. 5.

Description. This hemorrhagy commonly begins with a sense of weight and anxiety in the chest, some uneasiness in breathing, pain of the breast or other parts of the thorax, and some sense of heat under the sternum; and very often it is preceded by a saltish taste in the mouth. Immediately before the appearance of blood, a degree of irritation is felt at the top of the larynx. The person attempts to relieve this by hawking, which brings up a little florid and somewhat frothy blood. The irritation returns; and in the same manner blood of a similar kind is brought up, with some noise in the wind-pipe, as of air passing through a fluid. Sometimes, however, at the very first, the blood comes up with coughing, or at least somewhat of coughing, and accompanies the hawking above mentioned.

The blood is sometimes at first in very small quantity, and soon disappears; but in other cases, especially when it frequently recurs, it is in greater quantity, and often continues to appear at times for several days together. It is sometimes profuse, but rarely in such quantity as either by its excess or by a sudden suffocation to prove immediately mortal.

It is not always easy to discover whether the blood evacuated by the mouth proceeds from the internal surface of the mouth itself, from the fauces or adjoining cavities of the nose, from the stomach, or from the lungs. It is, however, very necessary to distinguish the different cases; and for this Dr Cullen offers the following considerations.

1. When the blood proceeds from some part of the internal surface of the mouth, it comes out without any hawking or coughing; and generally, upon inspection, the cause is evident.

2. When blood proceeds from the fauces, or ad-

VOL. XI. Part I.

joining cavities of the nose, it may be brought out by hawking, and sometimes by coughing. In this case there may be a doubt concerning its real source, and the patient may be allowed to please himself with the thoughts that the blood does not come from the lungs. But the physician must remember that the lungs are much more frequently the source of an hemorrhagy than the fauces. The latter seldom happens but to persons who have before been liable to an hemorrhagy from the nose, or to some evident cause of erosion; and in most cases, by looking into the fauces, the distillation of the blood from thence will be perceived.

3. When blood proceeds from the lungs, the manner in which it is brought up will commonly show from whence it comes; but, independent of that, it may also be known from the causes of hæmoptysis from the lungs, to be afterwards mentioned, having preceded.

4. When vomiting accompanies the throwing out of blood from the mouth, we may generally know the source from whence it proceeds, by considering that blood does not proceed so frequently from the stomach as from the lungs; that blood proceeding from the stomach commonly appears in greater quantity than from the lungs. The pulmonary blood also is usually of a florid colour, and mixed with a little frothy mucus only; but the blood from the stomach is of a darker colour, more grumous, and mixed with the other contents of the stomach. The coughing or vomiting, as the one or the other happens first to arise, may sometimes point out the source of the blood; and this hath also its peculiar antecedent signs and causes.

Causes, &c. An hæmoptysis may be produced at any time of life by external violence; and, in adult persons, while the arterial plethora prevails in the system, *i. e.* from the age of 16 to 35, an hæmoptysis may at any time be produced merely by a plethoric state of the lungs. More frequently, however, it arises from a faulty proportion between the capacity of the lungs and that of the rest of the body. Thus it is often an hereditary disease, which implies a peculiar and faulty conformation.

This disease especially happens to persons who discover the smaller capacity of their lungs by the narrowness of their chest, and by the prominence of their shoulders; which last is a mark of their having been long liable to a difficulty of respiration. In such cases, too, the disease very frequently happens to persons of a sanguine temperament, in whom particularly the arterial plethora prevails. It happens also to persons of a slender delicate make, of which a long neck is a mark; to persons of much sensibility and irritability, and therefore of quick parts; to persons who have formerly been liable to hemorrhagies from the nose; to those who have suffered a suppression of any usual hemorrhagy, the most frequent instance of which is in females, who have suffered a suppression of their menstrual flux; and, lastly, to persons who have suffered the amputation of any considerable limb.

All this constitutes the predisponent cause of hæmoptysis; and the disease may happen merely from the predisponent cause arising to a considerable height. But in those who are already predisposed, it is often brought on by the concurrence of various occasional

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and exciting causes. One of these, and perhaps a frequent one, is external heat; which, even when in no great degree, brings on the disease in spring, and the beginning of summer, while the heat rarifies the blood more than it relaxes the solids, which had before been contracted by the cold of winter. Another exciting cause is a sudden diminution of the weight of the atmosphere, especially when concurring with any effort in bodily exercise. The effort too, alone, may often be the exciting cause in those who are already predisposed; and more particularly any violent exercise of respiration. In the predisposed, also, the disease may be occasioned by any degree of external violence.

Prognosis. Hæmoptysis may sometimes be no more dangerous than a hæmorrhagy from the nose; as when it happens to females, in consequence of a suppression of their menses; when, without any marks of predisposition, it arises from external violence; or, from whatever cause arising, when it leaves no cough, dyspnoea, or other affection of the lungs, behind it. But, even in these cases, a danger may arise from too large a wound being made in the vessels of the lungs, from any quantity of red blood being left to stagnate in the cavity of the bronchiæ, and particularly from any determination of the blood being made into the vessels of the lungs, which by renewing the hæmorrhagy may have these consequences.

Cure. In the treatment of this disease, with a view of stopping the discharge, it is first necessary to have recourse to those measures which tend to diminish the impetus by which the blood is expelled. This is to be effected by a removal of plethora when it exists; by diminishing the general impetus of circulation; by diminishing local increased action when it takes place in the vessels of the lungs; and by producing a determination of blood to other parts of the system remote from the lungs. But besides practices diminishing impetus, it is often also necessary to employ such as augment the resistance to the passage of blood through the ruptured vessels of the lungs. With these views a variety of practices may be employed, particularly blood-letting, refrigerants, sedatives, astringents, and the like.

On this subject Dr Cullen differs from those who prescribe chalybeates and the Peruvian bark in the cure of hæmoptysis. Both of these, he observes, contribute to increase the phlogistic diathesis then prevailing in the system, and the hæmoptysis from predisposition is always accompanied with such a diathesis. Instead of these, therefore, he recommends blood-letting in greater or smaller quantity, and more or less frequently repeated as the symptoms shall direct. At the same time cooling purgatives are to be employed, and every part of the antiphlogistic regimen is to be strictly enjoined. In the London Medical Observations, the use of nitre is greatly recommended by Dr Dickson, to whom its efficacy was made known by Dr Letherland, physician to St Thomas's hospital. The most commodious method of exhibiting it he found was in an electuary. Four ounces of conserve of roses were made into an electuary with half an ounce of nitre; of which the bulk of a large nutmeg was directed to be given, four, six, or eight times a day, according to the urgency of the case. The good effects of this, he tells us, have often astonished him; and when given

early in the disease, he says he can depend as much upon it for the cure of an hæmoptysis, as on the bark for the cure of an intermittent. He agrees with Dr Cullen, however, that in those cases where there is any hardness in the pulse, and which almost always happens, there is a necessity for venesection. A cool regimen, and quiet of body and mind, are certainly useful; but Dr Cullen observes, that some kinds of gestation, such as sailing, and travelling in an easy carriage on smooth roads, have often proved a remedy. When the cough is very troublesome, it is absolutely necessary to exhibit frequently a small dose of an opiate. Dr Dickson also informs us, that the nitre joined with spermaceti, or *pulv. e tragacanth. comp.* has produced equally good effects with the electuary above mentioned; in the composition of which he at first considered the conserve only as a vehicle for the nitre, though he means not to insinuate that the former is totally destitute of efficacy.

When this hæmorrhagy has resisted other modes of cure, and there is reason to apprehend, even from the mere quantity of blood evacuated, that the patient may sink under the discharge, blisters, particularly when applied to the breast, are often had recourse to with great advantage; and the vitriolic acid, properly diluted, both as an astringent and refrigerant, is often employed with very good effects.

PHTHISIS.

PULMONARY CONSUMPTION.

237

Phthisis, *Sauv. gen.* 276. *Lin.* 208. *Vog.* 319.

Sag. 101. *Junc.* 33.

Phthisis pulmonis, *Boerb.* 1196.

Affectio phthisica, five tabes pulmonalis, *Hoffm.* II. 284.

Sp. I. The *Incipient PHTHISIS*, without expectoration of Pus. 238

Phthisis incipiens, *Morton. Physiolog. L. II. cap. 3.*

Phthisis sicca, *Sauv. sp. 1.*

Sp. II. The *Confirmed PHTHISIS*, with an expectoration of Pus. 239

Phthisis confirmata *auſtorum.*

Phthisis humida, *Sauv. sp. 2.*

Sometimes, notwithstanding all the care we can take, the hæmoptysis will degenerate into a phthisis pulmonalis, or consumption of the lungs; and sometimes an hæmoptysis will be the consequence of this dangerous disorder. It has been indeed supposed, that an ulceration of the lungs or phthisis was the natural and almost necessary consequence of an hæmoptysis; but, according to Dr Cullen, this is in general a mistake; for there are many instances of an hæmoptysis from external violence without being followed by any ulceration. The same thing has often been observed where the hæmoptysis arose from an internal cause; and this not only in young persons, when the disease returned for several times, but when it has often recurred during the course of a long life; and it may easily be conceived, that a rupture of the vessels of the lungs, as well as of the vessels of the nose, may be sometimes healed. The causes of phthisis, therefore, Dr Cullen reduces to five heads. 1. An hæmoptysis. 2. A suppuration of the lungs in consequence of a pneumonia.

Hemor-
rhagiæ

pneumonia. 3. A catarrh. 4. An asthma; and, 5. Tubercles.

1. When a phthisis arises from an hæmoptysis, it is probable that it is occasioned by particular circumstances; and what these circumstances are, may not always be easily known. It is possible, that merely the degree of rupture, or frequently repeated rupture, preventing the wound from healing, may occasion an ulcer; or it is possible, that red blood effused, and not brought up entirely by coughing, may, by stagnating in the bronchiæ, become acrid, and erode the parts. But these hypotheses are not supported by any certain evidence; and from many observations we are led to think, that several other circumstances must concur in producing the disease from hæmoptysis.

2. The second cause of an ulceration of the lungs mentioned above is a suppuration formed in consequence of pneumonia. When a pneumonia, with symptoms neither very violent nor very slight, has continued for many days, it is to be feared it will end in a suppuration: but this is not to be determined by the number of days; for, not only after the fourth, but even after the tenth day, there have been examples of a pneumonia ending by a resolution; and if the disease has suffered some intermission, and again recurred, there may be instances of a resolution happening at a much later period from the beginning of the disease than that just now mentioned. But, if a moderate disease, in spite of proper remedies employed, be protracted to the 14th day without any considerable remission, a suppuration is pretty certainly to be expected; and it will be more certain still, if no signs of resolution have appeared, or if an expectoration which had appeared shall have again ceased, and the difficulty of breathing has continued or increased, while the other symptoms have been rather abated.

That in a pneumonia, the effusion is made which may lay the foundation of a suppuration, may be concluded from the difficulty of breathing becoming greater when the patient is in a horizontal posture, or when the patient can lie more easily on the affected side. That, in such cases, a suppuration is actually begun, may be inferred from the patient's being frequently affected with slight cold shiverings, and with a sense of cold felt sometimes in one sometimes in another part of the body. We form the same conclusion also from the state of the pulse, which is commonly less frequent and softer, but sometimes quicker than before. That a suppuration is already formed, may be inferred from there being a considerable remission of the pain which had before subsisted; while with this the cough and especially the dyspnoea continue, and are rather increased. At the same time the frequency of the pulse is rather increased, the feverish state suffers considerable exacerbations every evening, and by degrees a hectic fever in all its circumstances comes to be formed.

In this state of symptoms, we conclude very confidently, that an abscess, or, as it is called, a *vomica*, is formed in some part of the pleura, and most frequently in that portion of it investing the lungs. Here purulent matter frequently remains for some time, as if enclosed in a cyst; but commonly not long before it comes to be either absorbed and transferred to some other part of the body, or breaks through into the cavity of the

lungs, or into that of the thorax. In the latter case it produces the disease called *empyema*; but it is when the matter is poured into the cavity of the bronchiæ that it properly constitutes the phthisis pulmonalis. In the case of empyema, the chief circumstances of a phthisis are indeed also present: but we shall here consider only that case in which the abscess of the lungs gives occasion to a purulent expectoration.

An abscess of the lungs, in consequence of pneumonia, is not always followed by a phthisis: for sometimes a hectic fever is not formed; the matter poured into the bronchiæ is a proper and benign pus, which frequently is coughed up very readily, and spit out; and though this purulent expectoration should continue for some time, if it be without hectic fever, the ulcer soon heals, and every morbid symptom disappears. This has so frequently happened, that we may conclude, that neither the access of the air, nor the constant motion of the lungs, will prevent an ulcer of these parts from healing if the matter of it be well-conditioned. An abscess of the lungs, therefore, does not necessarily produce the phthisis pulmonalis; and if it be followed by such a disease, it must be in consequence of particular circumstances which corrupt the purulent matter produced, render it unsuitable to the healing of the ulcer, and at the same time make it afford an acrimony, which, absorbed, produces a hectic fever and its consequences.

The corruption of the matter of such abscesses may be owing to several causes; as, 1. That the matter effused during the inflammation had not been a pure serum fit to be converted into a laudable pus, but had been joined with other matters which prevented that, and gave a considerable acrimony to the whole. Or, 2. That the matter effused and converted into pus, merely by long stagnation in a vomica, or by its connection with an empyema, had been so corrupted as to become unfit for the purpose of pus in the healing of the ulcer. These seem to be possible causes of the corruption of matter in abscesses, so as to make it the occasion of a phthisis in persons otherwise sound; but it is probable that a pneumonic abscess especially produces phthisis when it happens to persons previously disposed to that disease, and therefore only as concurring with some other causes of it.

3. The third cause supposed to produce a phthisis is a catarrh; which, in many cases, seems in length of time to have the expectoration of mucus proper to it gradually changed to an expectoration of pus; and at the same time, by the addition of a hectic fever, the disease, which was at first a pure catarrh, is changed into a phthisis. But this supposition is, in the opinion at least of some physicians, liable to several difficulties. The catarrh is properly an affection of the mucous glands of the trachea and bronchiæ analogous to the coryza and less violent kinds of cynanche tonsillaris, which very seldom end in suppuration. And although a catarrh should be disposed to do so, the ulcer produced might readily heal up, as it does in the case of a cynanche tonsillaris; and therefore should not produce a phthisis.

Further, the catarrh, as purely the effect of cold, is generally a mild disease as well as of short duration; and, according to Dr Cullen, there are at most but very few of the numerous cases of it, which can be said

Hemor-
rhagiz

to have ended in a phthisis. In all these cases in which this seems to have happened, he thinks it probable that the persons affected were peculiarly predisposed to phthisis; and the beginning of phthisis so often resembles a catarrh, that it may have been mistaken for such a disease. It often happens also, to increase the fallacy, that the application of cold, which is the most frequent cause of catarrh, is also frequently the exciting cause of the cough, which proves to be the beginning of a phthisis.

Many physicians have supposed that an acrimony of the fluids eroding some of the vessels of the lungs is a frequent cause of ulceration and phthisis; but this appears to Dr Cullen to be a mere supposition. He acknowledges, that in many cases an acrimony subsisting in some part of the fluids is the cause of the disease; but observes that it is at the same time probable, that this acrimony operates by producing tubercles, rather than by any direct erosion.

But notwithstanding these objections, experience affords numerous examples of cases in which a disease long subsisting under the form of catarrh has at last degenerated into phthisis, and proved fatal from supervening hectic fever. It must, however, at the same time be allowed, that catarrh, degenerating into a chronic state after subsisting for many years, has of itself often proved fatal without inducing phthisis.

4. If phthisis does not frequently follow catarrh, it is still more rarely a consequence of asthma. Innumerable examples are unquestionably afforded of that disease subsisting for many years without any symptom whatever of phthisis as a consequence of it. But at the same time, there are unquestionable examples of phthisis deriving its origin from asthma; which, however, probably happens only in cases where a peculiar state of the lungs at the same time takes place: But without the concurrence of asthma, this state would not of itself have been sufficient for inducing the affection.

5. Of all the causes formerly mentioned, phthisis most frequently arises from tubercles. Dr Simmons informs us, that he has had opportunities of inspecting the bodies of many people who died in this way, and never found them totally absent. He has likewise seen them in subjects of different ages, who had been troubled with no symptoms of an affection of the breast during their lifetime. In these, however, they were small, and few in number. This proves that they may exist without inconvenience till they begin to disturb the functions of the lungs by their size and number; or till some degree of inflammation be excited, either by accidental causes, or by certain changes that take place within their substance; for as yet we know but little of their true nature. These little tumors vary in their consistence; in some they are composed of a pulpy substance, and in others approach more to the nature of scirrhus. They are most commonly formed in consequence of a certain constitutional predisposition; but whatever is capable of occasioning a morbid irritability of the lungs seems also to be capable of generating them. Thus the spasmodic asthma frequently ends in tubercles and consumption; and it is not unusual for millers, stone-cutters, and others, to die consumptive, from their being so constantly exposed to dust, which in these cases probably acts by produ-

cing similar concretions: and Dr Kirkland observes, that scythe-grinders are subject to a disease of the lungs, from particles of sand mixing with iron-dust, which among themselves they call the *grinders rot*. Tubercles, however, in by much the greater number of instances, have their source from a scrophulous disposition; and some eminent physicians have supposed that the generality of pulmonary consumptions are of this kind. This notion, however, they have perhaps carried too far: they have probably been misled by these tuberculous concretions which, without good reason, have been supposed to be diseased glands, and of course analogous to the glandular affections we meet with in the scrophula. Tubercles may likewise sometimes be owing to the sudden repulsion of cutaneous eruptions, or of the matter of exanthemata, &c. or to other causes.

The persons who are most liable to consumption are those of a fair complexion, fine and soft skin, florid cheeks, and a slender make; with high cheek-bones, hollow temples, long neck, shoulders standing out like wings, narrow chest, and a remarkable prominence of the processes of the os sacrum. To these marks we may add, that of *sound teeth*, which, as the disease advances, usually become of a milky white colour, and more or less transparent. Of those who are carried off by this disease, Dr Simmons asserts, the greater number will be found never to have had a carious tooth. This circumstance, however, does not seem to us to hold so generally as Dr Simmons is disposed to imagine: and instances not unfrequently occur of patients dying of phthisis, although they have had many teeth subjected to caries; and some of these beginning even at an early period of life.

Persons of the above description often remain for a long time without feeling any other inconvenience than some oppression at the breast in moist weather, or in hot apartments. Their breathing is easily hurried, sometimes by the slightest motion; and they become languid, paler, and thinner. All this time, however, they feel no heat or painful sensation in the breast. As the evil increases, the patient begins to be attacked with a slight, frequent, and dry cough, which is most troublesome in the night-time. But this, by proper care, is often relieved; and the patient remains in this state for a considerable time, and even for many years, if he be sensible of his danger, and careful to guard against it by a suitable manner of living. More commonly, however, we find the cough increasing, and sometimes accompanied with more or less catarrh. This is usually ascribed to cold; and but too generally neglected, till the disease become alarming by its obstinacy and its effects. This may be considered as the *beginning*, or first period, of the disease. During this stage, the cough is sometimes dry from the first; and sometimes, when it begins in the form of a catarrh, is attended with more or less expectoration of mucus.

When the cough begins in the form of a catarrh, and appears to be occasioned by an increased secretion of a thin saltish mucus irritating the membrane of the trachea, all judicious practitioners agree in recommending an attention to regimen, the free use of diluting liquors, bland emulsions, small doses of nitre, the taking away a few ounces of blood if there be much

Phthisis.

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Hemor-
rhagiae

inflammation, the inhaling the steams of warm water by means of the machine contrived for that purpose, and the occasional use of such a dose of elixir paregoricum as will be sufficient to allay the irritation of the bronchiæ, and to promote a gentle moisture on the skin. These methods will generally be found to be efficacious, especially if the patient's chamber be of a moderate temperature, and he carefully avoid exposure to a cold, damp, or raw air, till the complaint be removed. In cases in which the cough has been obstinate, and the inflammatory symptoms considerable, Dr Simmons has often experienced the great advantages of the warm bath, the heat of which did not exceed 92°. When this is had recourse to, the patient should remain in it only a very few minutes, and go soon afterwards to bed; but not with a view to force a sweat by an increased weight of bed-clothes, as is too often injudiciously practised.

Patients of a consumptive habit, who have had an attack of this kind at the beginning of winter, are particularly liable to a return of the complaint during the continuance of the cold season, on the slightest occasion and with greater violence. A relapse is therefore to be carefully guarded against; and nothing will be found to do this more effectually than the use of socks and a flannel under-waistcoat. The use of flannel has been condemned by several medical writers as increasing the insensible perspiration; but in the present case, to say nothing of some others in which it may be useful, it will in general be found to have the best effects. It will prevent a too great determination to the lungs, and should not be left off till the approach of summer. In some few instances in which flannel was found to have a disagreeable effect, a piece of dymity, worn over the breast next the skin, prevented the return of colds and coughs in persons of a delicate habit, who had before been liable to them on the slightest occasions. Shirts made of cotton cloth are much more effectual than linen in preserving an equable temperature of the surface, and guarding against the action of external cold; while at the same time they are much more pleasant to most people than even the finest flannel. In these cases, circumstances that are seemingly of the most trifling nature become of importance.

Sometimes the cough is occasioned by an immediate inflammation of some part of the lungs, from some of the usual causes of inflammation; and when this happens, no time is to be lost in removing it. To do this will perhaps require more than one bleeding, together with a strict attention to a cooling plan of diet, diluting drinks, the inhalation of warm steams, and if convenient the use of the warm bath; but above all, the speedy application of a large blister as near as may be to the supposed seat of the inflammation. The cough, in this case, will often remain after the original complaint is abated. A prudent use of opiates at bed-time, either by themselves or combined with gummy and mucilaginous medicines, will then generally be useful as a sedative and antispasmodic.

In this, as well as in the catarrhal cough just now mentioned, many practitioners are too eager to administer the Peruvian bark, with the view, as they term it, of *bracing up* the patient: but this never fails to

increase the cough, and of course to do great and very often irreparable mischief.

And here it will not be foreign to our subject to observe, that a symptomatic cough, which has its rise not from catarrh, or from an immediate inflammation of the lungs, but from their sympathy with the stomach, has sometimes laid the foundation of phthisis, from its having been mistaken, and of course improperly treated. It seems to be owing to a redundancy or vitiated state of the bile, or to some affection of the stomach, which it is perhaps not easy to define. It is sometimes a concomitant of other bilious symptoms; and when this happens to be the case, it cannot easily be mistaken; but we sometimes find it occurring singly, and in general attacking persons of a sedentary life. Dr Stoll of Vienna, who has noticed this cough, has very properly given it the name of *tussis stomachica*. This complaint is so far from being relieved by bleeding, that it constantly grows worse after it, especially if the evacuation be in any considerable quantity. The oily remedies seldom fail to exasperate this cough, which at first is dry, frequent, and often extremely violent, but which seldom fails to give way to one or two gentle pukes, and the occasional use of mild cathartics. The cough, as in other cases, often continues from habit after the cause that gave rise to it has been removed, and may then be checked by opiates.

When the disease has been neglected, or our attempts to remove it in the beginning have failed, both of which circumstances but too frequently happen, the patient begins to complain of a soreness, and of slight lancinating pains shooting through the breast, sometimes in the direction of the mediastinum, and sometimes confined chiefly to one side. The soreness is pretty constant, and much increased by the cough. The pain in the side often prevents the patient from lying on the side affected; and this inability of lying, except on one side, frequently occurs even when no such pain is felt. In this stage of the disease, flushing heats are felt in the palms of the hands and soles of the feet: the breathing is short and laborious; and it is not long before the patient begins to expectorate a thin and frothy phlegm, at first in small quantities, coughed up with difficulty, and some pain of the breast, and now and then streaked with blood: this may be considered as the *inflammatory period* of the disease, to which succeeds the *suppurative stage*. In the latter, the expectoration becomes more copious and purulent, the breath proportionably offensive, and the exacerbations of the hectic fever more considerable: an increased quickness of the pulse comes on about the middle of the day; but the most considerable paroxysm of the fever is at night, and at first continues till towards morning, commonly till three or four o'clock, when it terminates in a sweat, which usually begins upon the breast. As the disease advances, these sweats become more profuse, and sometimes come on almost as soon as the pulse begins to quicken, but without affording any relief to the patient. During the exacerbations, we observe a circumscribed redness of the cheeks, while the rest of the face is pale, and appears as if it were not clean washed. The costiveness that commonly accompanies the beginning of the disease is usually succeeded by a diarrhoea; the spitting lessens,

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Hemor-
rhagiæ

and all the purulent matter seems to be carried downwards. The wasting of the fat and the loss of nourishment occasion the nails to curve inwards, the hair to fall off, and the eyes to sink in their sockets. In the mean time, the legs commonly swell; till at length death closes a scene which is melancholy to all but the patient himself, who in general continues sensible to the last moment, and even then indulges a vain hope of prolonging a miserable existence. In some cases, and that not unfrequently, a delirium comes on towards the close of the disease.

The hectic fever that attends this and some other chronic diseases, is evidently the effect of acrimony, and most commonly of pus absorbed and carried into the circulation. The nature of this acrimony, and the different irritability of different patients, are probably the sources of the variety we observe in fevers of this denomination; a variety which is doubtless much greater than we are aware of. Thus we find that the matter of the small-pox excites a fever of this kind; but this *secondary fever*, as it is called, differs from the hectic attendant on consumptions; nor does the latter correspond with that which sometimes accompanies the suppuration of a cancerous ulcer. In the pulmonary consumption, or at least in the third stage of it, the fever induced often appears to be of the putrid kind, and has been denominated *febris hectica putrida* by the judicious Morton, who considers it as being combined with a peripneumonic or inflammatory fever, which recurs as often as fresh tubercles begin to inflame. For although we have named one period of the disease the *inflammatory*, and another the *suppurative period*; yet we are not to suppose that the latter is exempt from inflammation. While matter is poured into the bronchiæ, or absorbed and carried into the system from one part of the lungs, other parts are in a crude state of inflammation, or advancing towards suppuration; so that, on examining the lungs of persons who die consumptive, we find some tubercles that are small and just formed, some that are large and full of matter, and others that are in a state of ulceration. This easily accounts for the occasional combination of inflammatory symptoms with those of the putrid hectic. When the matter absorbed is a laudable pus, as in the case of a psoas abscess, we find the form of the hectic fever differing from either of those we have mentioned.

Cure. In these different periods of the disease, the curative indications are sufficiently obvious. To prevent the formation of fresh tubercles; to obviate the inflammation of those already formed; to promote their resolution; to allay morbid irritability, the cough, and other troublesome symptoms; and, above all, to check the tendency to the hectic state, are the views that every rational physician proposes to himself in the treatment of the genuine consumption. We know of no medicines that can exert their specific effects upon the lungs by dissolving tuberculous concretions; nor is it probable, from what we know of the animal œconomy, that any such will ever be discovered. Yet medicines that operate in a general manner upon the system, may, by promoting absorption, and diminishing the determination to the lungs, tend to disperse tubercles, or to prevent their formation. There are ing wanting instances of wonderful recoveries in cases

where the evil was supposed to be beyond the power of physic; and in some, where nature was left to herself; so that a physician who has observed the various and powerful resources nature has within herself, will be very cautious how he asserts that a disease is incurable.

The most formidable effects of ulcerated lungs are the absorption and consequent hectic. It seems evident, that, in many cases, death is brought on by this, rather than by the lungs themselves being rendered unfit for the purposes of respiration. So that if we can obviate the effects of the absorption, diminish the preternatural determination to the lungs, and fulfil the other general indications just now mentioned, we may very often enable nature to recover herself. It may be alleged indeed, that the physician's art has hitherto proved very unsuccessful in these cases; but may not this be owing to the remedies that are employed being very often such as are inimical to the cure?

The Peruvian bark is, perhaps, the most commonly employed of any, and often confided in as an ultimate resource in these cases. But besides this, the elixir of vitriol, the balsams, and frequent bleedings, have each had their partizans. The use of blisters and issues, opiates, a milk and vegetable diet, exercise, and change of air, are pretty generally recommended by all. Concerning the bark, Default long ago observed, that it had been productive of great mischief in consumptive cases; and Dr Fothergill, in a paper lately published by him on this subject, very judiciously remarks, that the bark is so far from curing the hectic fever arising from disordered lungs, that, according to the best of his observations, it not only takes up that time which might probably have been better employed in the use of other medicines, but for the most part aggravates the disease beyond remedy. Indeed it has been the opinion of several attentive observers, that, whenever pus or any kind of matter excites an hectic fever, by being absorbed and carried into the circulation, the Peruvian bark will never fail to exasperate the complaint, especially if it be accompanied with any degree of inflammatory diathesis, unless the matter has a free outlet from the system; as in the case of abscesses, for instance, in which we often find the bark productive of excellent effects. It is likewise well known to be used as a tonic, to obviate the effects of fluor albus, or any other immoderate evacuation in delicate persons, which, by enfeebling the system, very often lays the foundation of phthisis: but the moment we have reason to suspect that the lungs are ulcerated, especially if this ulceration be attended with an inflammatory disposition; or if the separation of vitiated pus be the consequence of a peculiar increased morbid action of the vessels at the part, it ought to be laid aside; and in the genuine tuberculous consumption, perhaps it is at all times inadmissible.

Dr Fothergill, however, observes, that there are two causes of consumptions, which often produce symptoms so similar to those of the genuine phthisis, as sometimes to have led him to make use of the bark in apparent tendencies to a genuine pulmonary consumption with advantage.

One of these causes is, the suckling of children longer than is consistent with the mother's ability. This

Phthisis

Hemor-
rhagiae

This case frequently occurs among the middling and lower classes of females of constitutions naturally delicate and tender. In such a state of weakness, some slight cold brings on a cough, which increases gradually, till at length it produces the true pulmonary consumption. Here the bark given early, in moderate doses, and merely as a tonic remedy, is often of excellent use.

Another cause is, any weakening discharge, either from abscesses, the greater operations of surgery, a copious and constant *fluor albus*, or similar enfeebling evacuations. That the bark is, for the most part, of use in these cases, when the lungs are not inflamed, is indubitable; and if they be so affected, but not beyond a certain degree, it is also efficacious in preventing the progress of the consumption.

In phthical complaints succeeding such situations, a prudent trial of the bark seems necessary. Small doses of the decoction, either alone, or joined with the saline mixture or such other additions as the physician thinks proper, may be given. But if the breath becomes more tight and oppressed, the cough dry, the pulse more quick and hard, and especially if slight transitory pains or stitches about the thorax are more frequently complained of, a perseverance in the use of the bark will increase the disease. If such also should be the appearances in the progress of the disease, or, from whatever cause, if the bark be accompanied with such effects, the use of it ought to be withheld.

If, on the other hand, no pain, tightness, or oppression, is perceived, and there appears a manifest abatement of the symptoms, it will be advisable to proceed. The administration of this medicine, however, requires a judicious observer; and it ought neither to be given in the early inflammatory stage of this disease, nor be continued in any subsequent period, if it produce the effects above-mentioned.

By its tonic virtues it will often enable nature to conquer many difficulties. In confirmation of this remark, Dr Fothergill farther observes, that he has seen it of use in promoting expectoration, when this became deficient from want of strength towards the end of peripneumonic fevers; but that it stops this discharge, changes slight wandering pains into such as are fixed, and increases them with all their consequences, in a variety of cases.

The elixir of vitriol, or the pure vitriolic acid properly diluted, though in many instances a highly useful remedy, is often exhibited in consumptive cases with no less impropriety than the bark. This medicine, from its astringency, is obviously improper in the inflammatory state of the disease. But in the latter stage, when a general tendency to putrefaction takes place, it is serviceable in resisting the effect; it restrains the colliquative sweats; and if the lungs be not injured past reparation, it is allowed to be a very useful auxiliary.

Various are the opinions concerning the efficacy of Bristol-water in this disease. The experienced author last mentioned informs us, that he has seen many persons recover from pulmonary diseases after drinking these waters, whose cure seemed to be doubtful from any other process; and he thinks this circumstance, added to the general reputation of Bristol-waters in

phthical cases, affords sufficient inducement to recommend the trial of them in the early stages of such complaints. It is, however, before the approach of a confirmed phthisis that patients ought to repair to Bristol; otherwise a journey thither will not only be without benefit, but may even prove detrimental.

Some have imagined, that the journey, a better air, change of situation and of objects, have contributed to the patient's recovery; and these may doubtless be of advantage. It seems, however, that the water drank fresh at the pump, actually contains principles conducive to the recovery of patients affected with phthical complaints. It seems to possess a slight calcareous stipticity, and perhaps the air it contains may also have an antiseptic quality. On the whole, it appears to be an efficacious medicine, and is often found of remarkable benefit to consumptive patients.

Change of air, particularly from good to bad, is of great consequence in all chronic diseases of the lungs. In consumptive cases, the air of all large cities is found to be particularly injurious.

A sea-voyage has been much recommended in the cure of this disease. The benefit of exercise has also been strongly urged by many writers; but, however salutary when properly used, it certainly ought to be regulated with discretion. Dr Dickson declares himself of opinion, that riding on horseback in consumptive cases is most commonly hurtful, without such regulations as in general have been little regarded. For instance, he has known a person who, by a ride of an hour or two in the morning, was very much recruited, and who, at another time, in the afternoon and evening, without undergoing more bodily motion, has returned faint and languid, and apparently worse. This observation on the same person has been so frequently made, as to point out clearly the times when this exercise shall not do hurt in consumptive cases. In this disease, the pulse, however calm in the morning, becomes more frequent in the afternoon and night, attended with heat and other feverish symptoms. Exercise therefore, at this time, can only add to the mischief of the fever. For this reason he prudently recommends to all hectic persons, especially those who shall travel to distant places on account of a better air, or the benefit expected from any particular water, that their travelling should be slow, confined to a very few hours, and only in the morning.

Exercise on horse-back seems to be chiefly beneficial in those cases where consumption is a secondary disease. For example, in the nervous atrophy; in the hypochondriacal consumption; or when it is the effect of long-continued intermittents, or of congestions in any of the abdominal viscera; or, in a word, whenever the consumption is not attended with an inflamed or ulcerated state of the lungs; long journeys on horseback will be beneficial. Such a practice may likewise be highly useful in obviating an attack of phthisis, or in carrying off a dry husky cough in a person of a consumptive habit, when there is reason to suppose that no tubercles are as yet formed. On the other hand, in the confirmed phthisis, when the lungs are inflamed or ulcerated, much or violent exercise will be improper; and there have been instances where the death of the patient was evidently accelerated by it.

Phthisis

Hemor-
rhagiae

it. The exercise therefore should be gentle, proportioned to the strength of the patient, and employed only in the morning. In fine weather, an easy open carriage is perhaps the most eligible, not only on account of its being open to the air, but because it affords that kind of agitation which is most wanted in these cases. For if we consider the different modes of exercise, we shall find that walking, though the best exercise in health, as it employs the most muscles, is the worst for the sickly, who should have the benefit of exercise without fatigue. Riding on horseback agitates the viscera more than walking, and is therefore preferable to it in many chronic diseases; but when a preternatural determination to the lungs has taken place, it will be liable to increase the evil, and may likewise be hurtful by the fatigue that attends it. For these reasons it will be prudent to begin with a carriage; and if the patient gain strength, and the disease abates, recourse may afterwards be had to horse-exercise.

The gentle motion of a coach has been often found of great utility in pulmonary complaints. Its efficacy seems to depend chiefly on its increasing the determination to the surface of the body. The nausea which this motion excites in some persons is an effect of this increased determination. It has therefore been found beneficial in hæmoptysis; and Dr Simmons mentions the case of a lady, who, after trying various remedies to no purpose, was cured of this complaint by travelling several hundred miles through different parts of England in her own coach. At first, whenever she tarried three or four days in any place, the disorder began to return again; but at length by persevering in her journeys, it gradually went off. Default, who practised at Bourdeaux about 40 years ago, tells us, he sent several consumptive patients to Bareges, and with good success; but that in these cases his reliance was not so much upon the Bareges waters, as upon the motion of the carriage and the change of air in a journey of more than 100 leagues.

It is now pretty generally acknowledged, that the good effects of sea-voyages in consumptive cases depend more upon the constant and uniform motion of the ship, than upon any particular impregnation of the sea-air; although this from its coolness and purity may likewise be of great use, especially in the hot months, when sea-voyages are generally undertaken by consumptive patients. The ancients were no strangers to this remedy; and amongst the Romans it was no unusual thing for consumptive persons to sail to Egypt. Pliny observes, that this was done not for the sake of the climate, but merely on account of the length of the voyage.

Many of our English physicians have recommended a voyage to Lisbon in these cases. When this is done, the proper season of the year should be carefully attended to. Dr Simmons knew a gentleman who went thither with symptoms of incipient phthisis, and who experienced some relief during the course of the voyage; but happening to arrive at Lisbon at the beginning of the rainy season, the disease was soon greatly increased, and terminated fatally.

Another species of motion has of late been extolled as highly useful in consumptive cases. Dr James Carmichael Smyth of London, has lately published an
N 206.

account of the effects of swinging, employed as a remedy in the pulmonary consumption and hectic fever. In this treatise Dr Smyth contends, that sea-air, in place of being of advantage, is constantly prejudicial to hectic and consumptive patients, and even to those who have a tendency to such complaints. He thinks, therefore, that the benefit derived from sea-voyages must certainly be referred to some other cause. In stating his sentiments on this subject, he attempts to establish a distinction between exercise and motion. By exercise, he understands muscular action, or the exertion of the loco-motive powers of the body either alone or combined. This he represents as increasing the force and frequency of the heart's contraction, the velocity and momentum of the blood, the quickness of breathing, the heat, the irritability, and the transpiration of the whole body. By motion, in contradistinction to exercise, he means such motion as is not necessarily accompanied with any agitation or succussion of the body, and which is totally independent of any muscular exertion. The effects of this, both on the heart, the lungs, and indeed on the system in general, he considers as of the sedative kind; thus it suspends the action of coughing, and lessens the frequency of the pulse. He is, therefore, led to refer the good effects of sea-voyages entirely to this cause. And on these grounds he was led to conclude, that the motion given by swinging might be of equal if not greater service. This conclusion, we are told, in the treatise above alluded to, experience in many cases has fully confirmed. And he recommends it as a mode of cure which may be employed with advantage in every stage of phthisis. While, however, the reasoning of Dr Smyth on this subject seems to be liable to many objections, we are sorry to add, that his observations in practice have by no means been confirmed by those of others, who have had recourse to this mode of cure.

The best adapted diet in consumptive cases is milk, particularly that of asses. It may however be remarked, that there are constitutions in which this salutary nutriment seems to disagree. A propensity to generate bile, or too strong a disposition to acescency from a weakness of the digestive organs, both merit attention. Whey, either from cows or goats milk, appears to be more suitable in the former case; and for correcting acidity, lime-water may be added to the milk. The method of adding rum or brandy to asses or cows milk, should be used with great caution: for when added beyond a certain quantity, as is often the case, they not only coagulate the milk, but heat the body; by which means the former disagrees with the patient, and the spirit augments the disease.

In consumptive cases, Dr Simmons observes, that the patient's taste should be consulted; and says that a moderate use of animal-food, where the salted and high-seasoned kinds are avoided, is not to be denied. Shell-fish, particularly oysters, are useful, as well as snails swallowed whole, or boiled in milk.

Repeated bleedings, in small quantities, are considered in consumptive cases as highly advantageous: and in particular circumstances they undoubtedly are so; for instance, when the constitution apparently abounds with blood; when the fluid drawn off is extremely fizy; when there is much pain in the breast;

Phthisis.

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and when venesection is followed by an abatement of every symptom. In these cases, bleeding is certainly proper, and ought to be repeated so long as it seems to be attended with advantage. In very delicate constitutions, however, even where the pulse is quick, with some degree of fulness, and the blood last drawn considerably fizy, it may not prove equally serviceable.

It deserves to be remarked, that the inflammatory appearance of the blood is not alone a sufficient reason for bleeding; but, in determining the propriety of this evacuation, all other circumstances should be considered; such as the patient's age, strength, habit, and the state of the disease.

A remark which has been judiciously made by Dr Fothergill, ought not to be omitted in the account of this disease. It is, that young delicate females, from the age of 15 or 16, and upwards, are often subject to consumptions. When the disease has advanced considerably, the *menfes*, if they have made their appearance, most generally cease. This alarms their female friends, and they call upon the physician to use his utmost endeavours for restoring the discharge; believing the cessation of it to be the immediate cause of the phthical complaint. Induced by their solicitations, medicines have sometimes been administered, which, without obtaining this end, have tended to aggravate the distemper. This deficiency is often of no real disadvantage in those cases; and in many the evacuation would prove injurious, by diminishing the strength, which is already too much impaired. Even small bleedings at the regular periods have often done more harm than good. A sudden suppression may require bleeding; but when the evacuation fails through want of strength, and from poverty of blood, the renewal of it increases the disease.

Besides these remedies, Dr Simmons strongly recommends a frequent repetition of vomits. Many physicians have supposed, that where there is any increased determination to the lungs, vomits do mischief: but Dr Simmons is persuaded, that instead of augmenting they diminish this determination; and that much good may be expected from a prudent use of this remedy, than which none has a more general or powerful effect on the system. If any remedy be capable of dispersing a tubercle, he believes it to be vomits. The affections of the liver, that sometimes accompany pulmonary complaints, give way to repeated emetics sooner than to any other remedy. In several cases where the cough and the matter expectorated, the flushing heats, loss of appetite, and other symptoms, threatened the most fatal event; the complaints were greatly relieved, and in others wholly removed, by the frequent use of emetics. Other suitable remedies were indeed employed at the same time; but the relief the patients generally experienced after the emetic, was a sufficient proof of its salutary operation. By this, however, he does not mean that vomits will be useful in every period of the disease, or in every patient. In general, it will be found that the earlier in the disease emetics are had recourse to, the more likely they will be to do good and the less likely to do harm. The cases in which emetics may be reckoned improper, are commonly those in which the disease is rapid in its pro-

Vol. XI. Part I.

gress; or in that stage of it when there is great debility, with profuse colliquative sweats.

In these cases, when an emetic has been administered twice a-week, and the cough is mitigated, the expectoration facilitated, and the other symptoms relieved, both the patient and the physician will be encouraged to proceed, and to repeat the vomit every second day, or even every day, for several days together, as Dr Simmons has sometimes done when the good effects of it were obvious.

The choice of emetics to be employed in these cases is by no means a matter of indifference. Carduus tea, camomile tea, warm water, and others that act by their bulk, and by exciting nausea, relax the tone of the stomach when they are frequently repeated, and of course will be improper. More active emetics are therefore to be preferred; and here some of the preparations of antimony might naturally be thought of. But the operation of these is not confined to the stomach. They produce evacuations by stool, and a disposition to sweat; and are therefore improper in the pulmonary hectic. The mildness and excellence of ipecacuanha as an emetic, are well known; but in these cases, Dr Simmons has often employed the blue vitriol, concerning the effects of which we meet with some groundless assertions in several medical books. Its operation is confined to the stomach; it acts almost instantaneously, and its astringency seems to obviate the relaxation that is commonly supposed to attend the frequent use of emetics. In two cases he experienced its good effects, after vomits of ipecacuanha had been given ineffectually. It should be administered in the morning, and in the following manner:

Let the patient first swallow about half a pint of water, and immediately afterwards the vitriol dissolved in a cupful of water. The dose of it must be adapted to the age and other circumstances of the patient, and may be varied from two grains to ten, fifteen, or twenty. As some persons are much more easily puked than others, it will be prudent to begin with a small dose: not that any dangerous effects will be produced by a large one, for the whole of the medicine is instantly rejected; but if the nausea be violent, and of long continuance, the patient may perhaps be discouraged from repeating it. In general, the moment the emetic has reached the stomach it is thrown up again. The patient must then swallow another half pint of water, which is likewise speedily rejected; and this is commonly sufficient to remove the nausea.

Dr Marryat, in his *New Practice of Physic*, prescribes with great freedom what he calls the *dry vomit*, from its being directed to be taken without drinking. This medicine consists of blue vitriol and the emetic tartar; but its good effects have not yet been ascertained by other practitioners.

Another remedy which Dr Simmons strongly recommends in consumptive cases, both from his own observation and on the authority also of many other eminent practitioners, is gum myrrh. This given by itself to the extent of a scruple or half a dram for a dose, two or three times a-day, or, if there be much inflammatory tendency, combined with a proportion of nitre or of cream of tartar, has often been service-

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Phthisis.

Hæmorrhagiae

able in cases which were apparently instances of incipient phthisis even of the tuberculous kind. But when the disease is far advanced, or even decidedly marked, as far as our experience goes it has rarely if ever been productive of any benefit.

Besides the use of internal remedies in pulmonary affections, physicians have often prescribed the steams of resinous and balsamic substances to be conveyed into the lungs. The vapour of dulcified spirit of vitriol, dropt into warm water, has likewise been used in these cases, and is advertised as a nostrum under the name of *æther*. The inhaling of fixed air has also been spoken of as an useful practice. Dr Simmons has seen all of these methods tried at different times; but without being able to perceive any real advantages from them in the suppurative stage of the disease, where they might be expected to be of the greatest use; and in the beginning he has often found the two first to be too stimulating. He therefore preferred the simple vapour of warm water, and has experienced its excellent effects in several instances; but when the complaint has made any considerable progress, its utility is less obvious; and when the patients have been much weakened, he has seen it bring on profuse sweats, especially when used in bed, and therefore generally recommended it to be used in the day-time. Formerly he made use of a fumigating machine, described in the Gentleman's Magazine for 1748, in which the air, inspired by the patient, is made to pass through hot water by means of a tube that communicates with the external air, and with the bottom of the vessel: but we have now a more elegant and (on account of the valve and mouth-piece) a more useful instrument of this kind, the inhaler, invented by the ingenious Dr Mudge.

Another remedy recommended by some as a specific in consumptions is the earth-bath. Van Swieten, in his Commentaries on Boerhaave, tells us, from the information of a person of credit, that in some parts of Spain they have a method of curing the phthisis pulmonalis by the use of this remedy; and he quotes the celebrated Solano de Luque in confirmation of this practice. Solano speaks of the *banos de tierra*, or earth-baths, as a very old and common remedy in Granada and some parts of Andalusia, in cases of hectic fever and consumptions; and relates several instances of their good effects in his own practice. The method he adopted on these occasions was as follows: He chose a spot of ground on which no plants had been sown, and there he made a hole large and deep enough to admit the patient up to the chin. The interstices of the pit were then carefully filled up with the fresh mould, so that the earth might every where come in contact with the patient's body. In this situation the patient was suffered to remain till he began to shiver or felt himself uneasy; and during the whole process, Solano occasionally administered food or some cordial medicine. The patient was then taken out, and, after being wrapped in a linen cloth, was placed upon a matras, and two hours afterwards his whole body was rubbed with an ointment, composed of the leaves of the *solanum nigrum* and hog's lard. He observes, that a new pit must be made every time the operation is repeated; and advises the use of these baths only from the end of May to the end of October. Dr

Fouquet, an ingenious French physician, has tried this remedy in two cases. In one, a confirmed phthisis, he was unsuccessful; but the remedy had not a fair trial. The patient, a man 30 years of age, had been for several months afflicted with cough, hectic fever, and profuse colliquative sweats. He was first put into the earth in the month of June; but soon complained of an uneasy oppression at his stomach, and was removed at the end of seven minutes. The second time he was able to remain in it half an hour, and when taken out was treated in the way prescribed by Solano. In this manner the baths were repeated five times, and the patient was evidently relieved; but having conceived a dislike to the process, he refused to submit to any further trials, and died some months afterwards. In the second case he was more fortunate: the patient, a girl 11 years of age, had been for three months troubled with a cough brought on by the measles, which was at length attended with a purulent expectoration, hectic fever, and night-sweats. She began the use of the earth-bath in August, and repeated it eight times in the space of 20 days. At the end of that time the fever and disposition to sweat had entirely ceased, and by the use of the common remedies the patient was perfectly restored. A physician at Warsaw has likewise prescribed the earth-bath with good success in cases of hectic fever. The Spaniards confine it entirely to such cases; but in some other parts of the world we find a similar method employed as a remedy for other diseases, and particularly for the sea-scurvy. Dr Priestley observes, that the Indians, he has been told, have a custom of burying their patients labouring under putrid diseases up to the chin in fresh mould, which is also known to take off the fœtor from flesh-meat beginning to putrefy. The rancidity of a ham, for example, may be corrected by burying it for a few hours in the earth. The efficacy of this remedy in the sea-scurvy has, it is said, frequently been experienced by the crews of our East India ships.

Solano, who is fond of philosophizing in his writings, is of opinion, that the earth applied in this way absorbs the morbid taint from the system: but does it not seem more probable, that the effluvia of the earth, by being absorbed and carried into the circulation, corrects the morbid state of the fluids, and thus are equally useful in the sea-scurvy and in the pulmonary hectic? That the earth when moistened does emit a grateful odour is a fact generally known; and Baglivi long ago gave his testimony in favour of the grateful effects of the effluvia of fresh earth. He ascribes these good effects to the nitre it contains.

The earth-bath, both in consumptive cases and likewise in a variety of other affections, has of late been extensively employed in Britain by a celebrated empiric. But, as far as we can learn, in most cases it produced to the patient a very distressing sensation of cold; in some, it seemed to be productive of bad effects, probably in consequence of this cold; and we have not heard of any consumptive cases in which good effects were decidedly obtained from it.

With regard to the drains, such as blisters, issues, and setons, that are so frequently recommended in pulmonary complaints, there is less danger of abuse from them than from the practice of venesection. The discharge they excite is not calculated to weaken the pa-

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tient much; and the relief they have so often been found to afford, is a sufficient reason for giving them a trial. Blisters, as is well known, act in a twofold manner; by obviating spasm, and producing revulsion: Issues and setons act chiefly in the latter of these two ways; and in this respect their effects, though less sudden and less powerful at first, are more durable from the continuance of the discharge they occasion. It is perhaps hardly necessary to remark, that, if much service is to be expected from either of these remedies, they should be applied early in the disease. The ingenious Dr Mudge, who experienced the good effects of a large scapular issue on his own person, very properly observes, that the discharge in these cases ought to be considerable enough to be felt. But it is seldom possible for us to prevail on the delicate persons, who are most frequently the victims of this disease, to submit to the application of a caustic between the shoulders. The discharge produced by a seton is by no means inconsiderable; and as in these cases there is generally some inflammatory stich, some part of the breast that is more painful or more affected by a deep inspiration than the rest, a seton in the side, as near as can be to the seat of the inflammation, will be an useful auxiliary. Dr Simmons has seen it evidently of great use in several cases.

240

GENUS XXXVIII. HÆMORRHOIS.
HEMORRHOIDS, OR PILES.

Hæmorrhoides, *Sauv.* gen. 217. *Lin.* 192. *Sag.* gen. 182.

Hæmorrhoidalis fluxus, *Hoffm.* 219.

Hæmorrhoides, *Junck.* 11. and 12.

Leucorrhoides, *Vog.* 112.

241

Sp. I. External PILES.
Var. A. Bloody PILES.

Hæmorrhoides moderata, *Sauv.* sp. 1.

Hæmorrhoides ordinatæ, *Junck.* 11.

Hæmorrhoides nimix, *Junck.* 11.

Hæmorrhoides immodica, *Sauv.* sp. 2.

Hæmorrhoides excedentes, *Alberti.* de hæmorrhoid. p. 179.

Hæmorrhoides polyposa, *Sauv.* sp. 3.

Var. B. Mucous PILES.

Hæmorrhoides decoloratæ, albæ, et mucidæ, *Junck.* 13. *Alberti.* p. 248.

242

SP. II. The PILES from a Procidencia Ani.

Hæmorrhoides ab exania, *Sauv.* sp. 4.

243

Sp. III. The Running PILES.

244

Sp. IV. The Blind PILES.

Hæmorrhoides cæcæ, *Junck.* 12. *Alberti.* p. 274.

Description. The discharge of blood from small tumors on the verge of the anus constitutes what is called the hæmorrhoids or piles. They are distinguished into the external and internal, according to the situation of the tumors, either without or within the anus. Sometimes, however, these tumors appear without discharging any blood; and in this case they are called the hæmorrhoides cæcæ or blind piles. Sometimes the disease appears without the verge of the

anus in distinct separate tumors; but frequently only one tumid ring appears, seeming as it were the anus pushed without the body. Sometimes these tumors appear without any previous disorder of the body; but more frequently, before the blood begins to flow, and sometimes even before the tumors are formed, various affections are perceived in different parts of the body; as headach, vertigo, stupor, difficulty of breathing, sickness, colic pains, pain of the back and loins, and frequently a considerable degree of pyrexia; while along with these symptoms there is a sense of fullness, heat, itching, and pain, in and about the anus. Sometimes the disease is preceded by a serous discharge from the anus; and sometimes this serous discharge, accompanied with swelling, seems to come in place of the discharge of blood, and to relieve the above-mentioned disorders of the system. This serous discharge hath therefore been named the hæmorrhoides alba.

In this disease the quantity of blood discharged is different upon different occasions. Sometimes it flows only when the person goes to stool, and commonly follows the discharge of fæces. In other cases it flows without any discharge of fæces; and then generally in consequence of the disorders above-mentioned, when it is also commonly in larger quantity. This is often very considerable; and, by the repetition, so great, that we could hardly suppose the body to bear it but with the hazard of life. Indeed, though rarely, it has been so great as to prove suddenly fatal. These considerable discharges occur especially to persons who have been frequently liable to the disease. They often induce great debility, and frequently a leucophlegmatia or dropsy which proves fatal. Sometimes the tumors and discharges of blood in this disease recur exactly at stated periods. In the decline of life it frequently happens that the hæmorrhoidal flux, formerly frequent, ceases to flow; and in that case it generally happens that the persons are affected with apoplexy or palsy. Sometimes hæmorrhoidal tumors are affected with inflammation, which ends in suppuration, and gives occasion to the formation of fistulous ulcers in those parts.

The hæmorrhoidal tumors have often been considered as varices or dilatations of the veins; and in some cases varicous dilatations have appeared upon dissection. These, however, do not appear in the greater part of cases; and Dr Cullen is of opinion that they are usually formed by an effusion of blood into the cellular texture of the intestine near to its extremity. When recently formed, they contain fluid blood; but after they remain for some time they are usually of a firmer consistence, in consequence of the blood being coagulated.

Causes, &c. It would seem probable, that the hæmorrhoidal tumors are produced by some interruption of the free return of the blood from the rectum, by which a rupture of the extremities of the veins is occasioned. But considering that the hæmorrhagy occurring here is often preceded by pain, inflammation, and a febrile state, and with many other symptoms which show a connection of the topical affection with the state of the whole system, it is probable that the interruption of the blood in the veins

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produces a considerable resistance to the motion of the blood through the arteries, and consequently that the discharge of blood is commonly from the latter. Some have thought, that a difference of the hæmorrhoids, and of its effects upon the system, might arise from the difference of the hæmorrhoidal vessels from whence the blood issued. But Dr Cullen is of opinion, that we can scarce ever distinguish the vessels from which the blood flows, and that the frequent inoculations of both arteries and veins belonging to the lower extremity of the rectum, will render the effects of the hæmorrhagy much the same, from whatever source it proceeds.

With regard to the hæmorrhoids, however, he is of opinion, that they are, for the most part, merely a topical affection. They take place before the period of life at which a venous plethora happens. They happen to females, in whom a venous plethora determined to the hæmorrhoidal vessels cannot be supposed to occur; and they happen to both sexes, and to persons of all ages, from causes which do not affect the system, and are manifestly suited to produce a topical affection only.

These causes are, in the first place, the frequent voiding of hard and bulky fæces, which, by their long stagnation in the rectum, and especially when voided, must necessarily press upon the veins of that part, and interrupt the course of the blood in them. For this reason the disease so frequently happens to those who are habitually costive. From the same causes, the disease happens frequently to those who are subject to a prolapsus ani. In voiding the fæces, it almost always happens that the internal coat of the rectum is more or less protruded; and, during this protrusion, it sometimes happens that the sphincter ani is contracted: in consequence of this, a strong constriction is made, which preventing the fallen-out gut from being replaced, and at the same time preventing the return of blood from it, occasions a considerable swelling, and the formation of a tumid ring round the anus.

Upon the sphincter's being a little relaxed, as it is immediately after its strong contraction, the portion of the gut which had fallen out is commonly taken into the body again; but by the frequent repetition of the accident, the size and fulness of the ring formed by the prolapsed intestine is much increased. It is therefore more slowly and difficultly replaced; and in this consists the chief uneasiness of hæmorrhoidal persons. As the internal edge of this ring is necessarily divided by clefts, the whole often puts on the appearance of a number of distinct swellings; and it also frequently happens, that some portions of it are more considerably swelled, become more protuberant, and form those small tumors more strictly called *hæmorrhoids* or *piles*.

From considering that the pressure of the fæces, and other causes interrupting the return of venous blood from the lower extremity of the rectum, may operate a good deal higher up than that extremity, we may understand how tumors may be formed within the anus; and probably it also happens, that some of the tumors formed without the anus may continue when taken within the body, and even be increased by the causes just mentioned. Thus may the

production of internal piles be explained, which, on account of their situation and bulk, are not protruded on the person's going to stool, and are therefore more painful.

The production of piles is particularly illustrated by this, that pregnant women are frequently affected with the disease.—This is to be accounted for, partly from the pressure of the uterus upon the rectum, and partly from the costive habit to which pregnant women are liable. Dr Cullen has known many instances of piles happening for the first time during the state of pregnancy; and there are few women who have born children, that are afterwards entirely free from piles.—Purgatives also, especially those of the more acrid kind, and particularly aloetics, are apt to produce the piles when frequently used; and as they stimulate particularly the larger intestines, they may be justly reckoned among the exciting causes of this disease.

Prognosis. Though the hæmorrhoids are commonly, as we have said, to be esteemed a topical disease, they may, by frequent repetition, become habitual and connected with the state of the whole system; and this will more readily happen in persons who have been once affected with the disease, if they be frequently exposed to a renewal of the causes which occasioned it. It happens also to persons much exposed to a congestion in the hæmorrhoidal vessels, in consequence of their being often in an erect position of the body, and in an exercise which pushes the blood into the depending vessels, while at the same time the effects of these circumstances are much favoured by the abundance and laxity of the cellular texture about the anus. It is to be particularly observed, that when an hæmorrhoidal affection has either been originally or has become a disease of the system, it then acquires a particular connection with the stomach; so that certain affections of the stomach excite the hæmorrhoidal disease, and certain states of this disease excite the disorders of the stomach.

It has been an almost universally received opinion, that the hæmorrhoidal flux is a salutary evacuation, which prevents many diseases that would otherwise have happened; and that it even contributes to give long life: and as this opinion has been strenuously adopted by Dr Stahl, it has had a very considerable influence on the practice of physic in Germany. But Dr Cullen maintains that we can never expect to reap much benefit from this flux, which at first is purely topical; and, granting that it should become habitual, it is never, he thinks, proper to be encouraged. It is a disagreeable disease; ready to go to excess, and thereby to prove hurtful, and sometimes even fatal. At best it is liable to accidents, and thus to unhappy consequences. He is therefore of opinion, that even the first approaches of the disease are to be guarded against; and that, though it should have proceeded for some time, it ought always to be moderated, and the necessity of it superseded.

Cure. The general intentions of cure in cases of hæmorrhoids are much varied, according to the circumstances of the affection at the time. When hæmorrhoids exists in the state of tumor, the principal objects are to counteract inflammation, and to promote a discharge of blood from the part. When it is in the
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state of evacuation, the chief intentions of cure are, to diminish the impetus of blood at the part affected, and to increase the resistance to the passage of blood through the ruptured vessels. And finally, when the disease exists in the state of suppression, the aims of the practitioner must chiefly be, to obviate the particular affections which are induced in consequence of the suppression; to restore the discharge, as a means of mitigating these and preventing others; or, when the discharge cannot with propriety or advantage be restored, to compensate the want of it by vicarious evacuations.

With these various intentions in different cases, a variety of different remedies may be employed with advantage.

When any evident cause for this disease is perceived, we ought immediately to attempt a removal of that cause. One of the most frequent remote causes is an habitual costiveness; which must be obviated by a proper diet, such as the person's own experience will best direct; or if the management of diet be not effectual, the belly must be kept open by medicines, which may prove gently laxative, without irritating the rectum. In most cases it will be of advantage to acquire a habit with regard to the time of discharge, and to observe it exactly. Another cause of the hæmorrhoids to be especially attended to is the prolapsus ani, which is apt to happen on a person's having a stool. If this shall occur to any considerable degree, and be not at the same time easily and immediately replaced, it most certainly produces piles, or increases them when otherwise produced. Persons therefore who are liable to this prolapsus, should, after having been at stool, take great pains to have the intestine immediately replaced, by lying down in an horizontal posture, and pressing gently upon the anus, till the reduction shall be completely obtained. When this prolapsus is occasioned only by the voiding of hard and bulky fæces, it is to be removed by obviating the costiveness which occasions it. But in some persons it is owing to a laxity of the rectum; and in those it is often most considerable on occasion of a loose stool. In these cases, it is to be treated by astringents, and proper artifices are to be employed to keep the gut in its place.

When the disease has frequently recurred from neglect, and is thus in some measure established, the methods above-mentioned are no less proper; but in this case some other measures must also be used. It is especially proper to guard against a plethoric state of the body; and therefore to avoid a sedentary life, full diet, and intemperance in the use of strong liquor, which in all cases of hæmorrhagy is of the most pernicious consequence.

Exercise of all kinds is of great service in obviating and removing a plethoric state of the body; but upon occasion of the hæmorrhoidal flux, when this is immediately to come on, both walking and riding, as increasing the determination of the blood into the hæmorrhoidal vessels, are to be avoided. At other times, when no such determination is already formed, these modes of exercise may be very properly employed.

Another method of removing plethora is by cold bathing; but this must be employed with caution. When the hæmorrhoidal flux is approaching, it may

be dangerous to divert it; but during the intervals of the disease, cold bathing may be employed with safety and advantage; and in those who are liable to a prolapsus ani, the frequent washing of the anus with cold-water may be useful.

Besides general antiphlogistic regimen, in some cases where the inflammation runs high, recourse may be had with great advantage both to general blood-letting and to leeches applied at the anus. Relief is also often obtained from the external application of emollients, either alone or combined with different articles of the sedative kind, as acetated ceruse or opium, by which it is well known that pain in general, particularly when depending on increased sensibility, or augmented action of the vessels, is powerfully allayed.

When the flux has actually come on, we are to moderate it as much as possible, by causing the patient lie on a horizontal posture on a hard bed; by avoiding exercise in an erect posture, using a cool diet, and avoiding external heat. But with respect to the further cure of this disease, we must observe, that there are only two cases in which it is common for hæmorrhoidal persons to call for medical assistance. The one is, when the affection is accompanied with much pain; and the other, when the piles are accompanied with excessive bleeding. In the first case, we must consider whether the piles be external or internal. The pain of the external piles happens especially when a considerable protrusion of the rectum has taken place; and while it remains unreduced, it is strangled by the constriction of the sphincter; and at the same time no bleeding happens to take off the swelling of the protruded portion of the intestine; and sometimes an inflammation supervenes, which greatly aggravates the pain. In this case, emollient fomentations and poultices are sometimes of service, but the application of leeches is generally to be preferred.

In case of excessive bleeding, we are on all occasions to endeavour to moderate the flux, even where the disease has occurred as a critical discharge; for if the primary disease shall be entirely and radically cured, the preventing any return of the hæmorrhoids seems perfectly safe and proper. It is only when the disease arises from a plethoric habit, and from a stagnation of blood in the hypochondriac region, or when, though originally topical, it has by frequent repetition become habitual, and has thereby acquired a connection with the system, that any doubt can arise about curing it entirely. In any of these cases, however, Dr Cullen is of opinion that it will be proper to moderate the bleeding, lest, by its continuance or repetition, the plethoric state of the body, and the particular determination of the blood into the hæmorrhoidal vessels, be increased, and the return of the disease be too much favoured. Dr Stahl is of opinion, that the hæmorrhoidal flux is never to be accounted excessive excepting when it occasions great debility or leucophlegmatia; but Dr Cullen thinks, that the smallest approach towards producing either of these effects should be considered as an excess which ought to be prevented from going farther; and even in the cases of congestion and plethora, if the plethoric habit and tendency can be obviated and removed, the hæmorrhoidal flux may then with safety be entirely suppressed. In all cases therefore of excessive bleeding, or any approach

Hæmor-
rhoids.

Hæmorrhagia

proach to it, astringents both internal and external may be safely and properly applied; not indeed to induce an immediate and total suppression; but to moderate the hæmorrhagy, and by degrees to suppress it altogether; while at the same time measures are to be taken for the removing the necessity of its recurrence.

245

GENUS XXXIX. MENORRHAGIA.

*Immoderate Flow of the MENSES.*Menorrhagia, *Sauv.* 244. *Lin.* 202. *Vog.* 96.Metrorrhagia, *Sag.* gen. 179.Uteri hæmorrhagia, *Hoffm.* II. 224.Hæmorrhagia uterina, *Junc.* 14.Leucorrhœa, *Sauv.* gen. 267. *Lin.* 201. *Vog.* 119.*Sag.* gen. 202.Cachexia uterina, five fluor albus, *Hoffm.* III. 348.Fluor albus, *Junc.* 133.Abortus, *Sauv.* gen. 245. *Lin.* 204. *Sag.* gen. 180.*Junc.* 92.Abortio, *Vog.* 97.Fluor uterini sanguinis, *Boerb.* 1303.Convulsio uteri, five abortus, *Hoffm.* III. 176.

246

Sp. I. The *Immoderate Flow of the MENSES*, properly so called.

Menorrhagia rubra, *Cul.*Menorrhagia immodica, *Sauv.* sp. 3.Menorrhagia stillatitia, *Sauv.* sp. 2.

Description. The quantity of the menstrual flux is different in different women, and likewise in the same woman at different times. An unusual quantity therefore is not always to be considered as morbid: but when a large flow of the menses has been preceded by headach, giddiness, or dyspnœa; has been ushered in by a cold stage, and is attended with much pain of the back and loins, with a frequent pulse, heat and thirst; it may then be considered as preternaturally morbid. On the other hand, when the face becomes pale, the pulse weak, an unusual debility is felt in exercise, and the breathing is hurried by little labour; when the back becomes pained from any continuance in an erect posture, when the extremities become frequently cold, and when at night the feet appear affected with œdematous swelling: from all these symptoms we may conclude, that the flow of the menses has been immoderate, and has already induced a dangerous state of debility. The debility, induced in this case, often appears also by affections of the stomach, an anorexia, and other symptoms of dyspepsia; by a palpitation of the heart, and frequent faintings; by a weakness of mind, liable to strong emotions from slight causes, especially those presented by surprise. A large flow of the menses attended with barrenness in married women, may generally be considered as preternatural and morbid. Generally, also, that flow of the menses may be considered as immoderate, which is preceded and followed by a leucorrhœa.

Causes, &c. The proximate cause of the menorrhagia is either the effort of the uterine vessels preternaturally increased, or a preternatural laxity of the extremities of the uterine arteries.—The remote causes may be, 1. Those which increase the plethoric state of the uterine vessels; as a full and nourishing diet, much

strong liquor, and frequent intoxications. 2. Those which determine the blood more copiously and forcibly into the uterine vessels; as violent strainings of the whole body; violent shocks from falls; strokes or contusions on the lower belly; violent exercise, particularly in dancing; and violent passions of the mind. 3. Those which particularly irritate the vessels of the uterus: as excess in venery; the exercise of venery in the time of menstruation; a costive habit, giving occasion to violent straining at stool; and cold applied to the feet. 4. Those which have forcibly overstrained the extremities of the uterine vessels; as frequent abortions, frequent child-bearing without nursing, and difficult or tedious labours. Or, lastly, those which induce a general laxity; as living much in warm chambers, and drinking much of warm enervating liquors, such as tea, coffee, &c.

Cure. The treatment and cure of the menorrhagia, must be different according to the different causes of the disease. The practices employed, however, are chiefly used with one or two intentions; either with the view of restraining the discharge when present, or of preventing the return of an excessive discharge at the succeeding period. The first is chiefly to be accomplished by employing such practices as diminish the force occasioning the discharge of blood, or as augment the resistance to its passage through the vessels by which it is to be discharged. The last is in some degree to be obtained by avoiding causes which either increase the general impetus of the blood, or the impetus at the uterus in particular; but principally by giving additional vigour to the uterine vessels.

In all cases, the first attention ought to be given to avoiding the remote causes, whenever that can be done; and by such attention the disease may be often entirely cured. When the remote causes cannot be avoided, or when the avoiding them has been neglected, and a copious menstruation has come on, it should be moderated as much as possible, by abstaining from all exercise at the coming on or during the continuance of the menstruation; by avoiding even an erect posture as much as possible; by shunning external heat, and of course warm chambers and soft beds; by using a light and cool diet; by taking cold drink, at least as far as former habits will allow; by avoiding venery; by obviating costiveness, or removing it by laxatives which give little stimulus. The sex are commonly negligent, either in avoiding the remote causes, or in moderating the first beginnings of this disease. It is by such neglect that it so frequently becomes violent and of difficult cure; and the frequent repetition of a copious menstruation may be considered as a cause of great laxity in the extreme vessels of the uterus.

When the coming on of the menstruation has been preceded by some disorder in other parts of the body, and is accompanied with pains of the back, somewhat like parturient pains, with febrile symptoms, and when at the same time the flow seems to be copious, a bleeding at the arm may be proper, but is not often necessary; and it will in most cases be sufficient to employ, with great attention and diligence, those means already mentioned for moderating the discharge.

When the immoderate flow of the menses shall seem

Menorrhagia

Hæmorrhagiae

to be owing to a laxity of the vessels of the uterus, as may be concluded from the general debility and laxity of the person's habit; from the remote causes that have occasioned the disease; from the absence of the symptoms which denote increased action in the vessels of the uterus; from the frequent recurrence of the disease; and particularly from this, that the female in the intervals of menstruation is liable to a leucorrhœa: in such a case, the disease is to be treated, not only by employing all the means above mentioned for moderating the hemorrhagy, but also by avoiding all irritation, every irritation having a greater effect in proportion as the vessels are more lax and yielding. If, in such a case of laxity, it shall appear that some degree of irritation concurs, opiates may be employed to moderate the discharge; but in using these much caution is requisite. If, notwithstanding these measures having been taken, the discharge shall prove very large, astringents both external and internal may be employed. In such cases, Dr Cullen asks, May small doses of emetics be of service?

When the menorrhagia depends on the laxity of the uterine vessels, it will be proper, in the intervals of menstruation, to employ tonic remedies; as cold bathing and chalybeates. The exercises of gestation also may be very useful, both for strengthening the whole system, and for taking off the determination of the blood to the internal parts.

These remedies may be employed in all cases of menorrhagia, from whatever cause it may have proceeded, if it shall have already induced a considerable degree of debility in the body.

247

Sp. II. ABORTION.

Menorrhagia abortus, *Cul.*Menorrhagia gravidarum, *Sauv.* sp. 6.Abortus effluxio, *Sauv.* sp. 1.

a. Abortus subtrimestris.

b. Abortus subsemestris.

c. Abortus octimestris.

Abortus ab uteri laxitate, *Sauv.* sp. 2.

248

Sp. III. Immoderate Flux of the LOCHIA.

Menorrhagia lochialis, *Sauv.* sp. 8. *Cul.*

For the description, treatment, and cure, of these two last diseases, see the article MIDWIFERY.

249

Sp. IV. Immoderate Flow of the MENSES from some Local Disorder.

Menorrhagia vitiorum, *Cul.*Menorrhagia ex hysteroptosi, *Sauv.* sp. 5.Menorrhagia ulcerosa, *Sauv.* sp. 9.

250

Sp. V. The Leucorrhœa, Fluor Albus, or Whites.

Menorrhagia alba, *Cul.*Leucorrhœa, *Sauv.* G 267.Menorrhagia decolor, *Sauv.* sp. 7.Leucorrhœa Americana, *Sauv.* sp. 5.Leucorrhœa Indica, *Sauv.* sp. 6.Leucorrhœa Nabothi, *Sauv.* sp. 9.Leucorrhœa gravidarum, *Sauv.* sp. 8.

Description. The *fluor albus*, female weakness, or *whites*, as it is commonly called, is a disease of the womb and its contiguous parts; from which a pale

coloured, greenish, or yellow fluid, is discharged, attended with loss of strength, pain in the loins, bad digestion, and a wan sickly aspect.

Causes, &c. The quantity, colour, and consistence of the discharge, chiefly depend upon the time of its duration, the patient's habit of body, and the nature of the cause by which it was produced. Taking cold, strong liquor, immoderate heat and moisture, or violent exercise, are all observed to produce a bad effect, as to its quantity and quality.

Weakly women of lax solids, who have had many children, and long laboured under ill health, are of all the most subject to this disagreeable disease; from which they unfortunately suffer more severe penance than others, as the nicest sensations are often connected with such a delicacy of bodily frame as subjects them to it.

In Holland it is very frequent, and in a manner peculiar to the place, from the dampness of its situation; the surrounding air being so overcharged with moisture as to relax the body, stop perspiration, and throw it upon the bowels or womb; producing in the first a diarrhœa or flux, in the last the *fluor albus* or female weakness.

The discharge often proceeds from the vessels subservient to menstruation; because, in delicate habits, where those vessels are weak, and consequently remain too long uncontracted, the *fluor albus* sometimes immediately follows the menses, and goes off by degrees as they gradually close. It also comes from the mucus glands of the womb, as is particularly evident in very young females of eight and ten years old; in whom, though very rarely, it has been observed, and where it must then necessarily have escaped from those parts, as the uterine vessels are not sufficiently enlarged for its passage at so early a period.

Sometimes, as in women with child, it proceeds from the passage to the womb, and not from the womb itself; which, during pregnancy, is closely sealed up, so that nothing can pass from thence till the time of labour. The application of those instruments called *peffaries*, from the pain and irritation they occasion, are also apt to bring on this discharge. Hence we may conclude, that this disease may happen although the blood be in a pure state. Here the fault seems to be placed in the vessels at the part, by which the fluids are vitiated and changed from their natural qualities.

The *fluor albus* has been supposed to supply the want of the menses; because where the first prevails, the last is generally either irregular or totally wanting; but it might more properly be said, that the presence of the *fluor albus*, which is a preternatural evacuation, occasions the absence of that which is natural; as is evident from the return of the menses after the *fluor albus* has been cured. Indeed, when this discharge appears about the age of 13 or 14, and returns once a month, with symptoms like those of the menses, then it may be deemed strictly natural, and therefore ought not to be stopped.

Prognosis. The *fluor albus* may be distinguished into two kinds. The first arises from a simple weakness, or the relaxation of the solids; which may either be *general*, where the whole bodily system is enervated and unstrung; or *partial*, where the womb only is thus affected,

Leucorrhœa.

Hæmor-
rhagiae

affected, in consequence of hard labour, frequent miscarriages, a suppression or immoderate quantity of the menses, or a sprain of the back or loins.

In the first case, the discharge being generally mild, may be safely taken away. In the second, it may proceed from a vitiated or impure blood, where the body, from thence, is loaded with gross humours, which nature for her own security and relief thus endeavours to carry off. In such cases, the discharge is often of a reddish colour, like that from old ulcerous sores; being sometimes so sharp as to excoriate the contiguous parts, and occasion a smarting and heat of urine.

A deep-seated, darting pain, with a forcing down, attending such a discharge, is a very dangerous and alarming sign, and indicates an ulceration or cancerous state of the womb. This malignant state of the disease, if of long continuance, is extremely difficult of cure; and disposes the patient to barrenness, a bearing down, dropfy, or consumption.

Cure, &c. The causes of those two kinds of this disease being different, so they will require a very different method of cure. For this purpose, in the first case, nothing will be more proper than nourishing simple food; such as veal broths, jellies, fresh eggs, and milk diet. The acid fruits will also be proper; and the patient may take a restorative, strengthening infusion, which will give firmness to the body, and assist the weakened fibres of the womb in returning to their natural state.

The same method may be used with success, where the *fluor albus* follows the menses, as already observed.

The Tunbridge or Spa waters may be drank at the same time; and if necessary, an infusion of green tea, or pure smith's forge water, may be used with a womb-syringe as an injection twice a-day. Should the disease prove uncommonly obstinate, the patient may go into the cold bath every second day; and also drink lime-water with milk, which will expedite the cure, and prevent a relapse. Volatile liniment, and afterwards a strengthening plaster, may be applied to the small of the back.

By way of caution, the female should abstain from the immoderate use of tea; and be removed into a dry clear air; or if she be obliged to remain in one less proper, she may apply the flesh-brush, and wear a flannel shift next her skin, impregnated with the fumes of burning frankincense or any of the grateful aromatic gums. Cold spring-water pumped on the loins, or a blistering plaster applied to the bottom of the spine or back, are both very powerful in their effects, and have sometimes succeeded after other remedies had been tried in vain.

In the second sort of the disease, where the discharge is sharp and of long standing, it would be extremely dangerous to suppress it suddenly, either by astringents internally taken, or applied as injections, until the system be restored to a more sound and vigorous condition.

A purging potion may be taken twice a-week, and in the intervals an alterative pill night and morning. After this course has been continued a fortnight or three weeks, she may begin with the strengthening bitter infusion, or some other tonic, in the quantity

Nº 206.

of a tea-cupful twice a-day, or to a greater extent if the stomach will allow.

Leucor-
rhœa

The same sort of food and regimen will here be proper as in the first kind of the disease. The patient should abstain from malt liquors, and drink rice-water, in each pint of which half an ounce of gum-arabic has been dissolved; or if she be weak, and of a cold bloated habit of body, a little French brandy may be added occasionally.

When she begins to take the bitter infusion, it will be proper to use the Tunbridge or Pyrmont water for common drink; but if those cannot conveniently be had, the *artificial aerated water*, impregnated with iron and fixed air, will make an excellent substitute. If it should render her costive, and occasion head-ach, she may desist, and drink imperial water or a little fenna-tea sweetened with manna, till those complaints be removed.

In short, as this is a malady of the most disagreeable kind, which by long continuance or neglect becomes difficult of cure and often produces an *ulceration of the womb, bearing down, barrenness, a dropfy, or consumption*; it were to be wished that women, on such occasions, would be more attentive to their own safety, by using all possible means, in due time, to prevent those disorders.

Dr Leake says he has attended more patients labouring under the *fluor albus* in the autumn than at any other season of the year, especially when the weather was uncommonly moist and cold: most of them were cured by change of diet, an increased perspiration, and the proper use of Peruvian bark with aromatics. He observed, that several about this time who escaped the disorder, were visited with bad colds, a defluxion on the throat, or a diarrhœa, which were removed by a similar treatment.

As women are sometimes connected with those who do not conscientiously regard their safety, it is a circumstance of the utmost consequence to distinguish a *fresh venereal infection from the fluor albus or whites*: for if the first be mistaken for the last, and be either neglected or improperly treated, the worst consequences may arise.

The following signs will best inform the patient whether there be occasion for her doubts or not.

A fresh infection, called *gonorrhœa*, is malignant and inflammatory; the *fluor albus* most commonly arises from relaxation and bodily weakness: and therefore the remedies proper in the first disorder would render the last more violent, by locking up and confining the infectious matter.

In the gonorrhœa, the discharge chiefly proceeds from the parts contiguous to the urinary passage, and continues whilst the menses flow; but in the *fluor albus* it is supplied from the cavity of the womb and its passage, and then the menses are seldom regular.

In the gonorrhœa, an itching, inflammation, and heat of urine, are the fore-runners of the discharge; the orifice of the urinary passage is prominent and painful, and the patient is affected with a frequent irritation to make water. In the *fluor albus*, pains in the loins, and loss of strength, attend the discharge; and if any inflammation or heat of urine follow, they happen in a less degree, and only after a long con-

tinuance

Hæmorrhagiæ continuance of the discharge, which, becoming sharp and acrimonious, excoriates the surrounding parts.

In the gonorrhœa, the discharge suddenly appears without any evident cause; but in the *fluor albus*, it comes on more slowly, and is often produced by irregularities of the menses, frequent abortion, sprains, or long-continued illness.

In the gonorrhœa, the discharge is greenish or yellow, less in quantity, and not attended with the same symptoms of weakness. In the *fluor albus*, it is also often of the same colour, especially in bad habits of body, and after long continuance; but is usually more offensive, and redundant in quantity.

All the other kinds of hemorrhagy enumerated by medical writers, are by Dr Cullen reckoned to be symptomatic; as,

STOMACACE, *Sauv.* gen. 241. *Lin.* 175. *Vog.* 85. *Sag.* gen. 176.

Species: Scorbutica, Purulenta, &c.

HÆMATEMESIS, *Sauv.* gen. 242. *Lin.* 184. *Vog.* 89. gen. 177.

Species: Plethorica, Catamenialis, Scorbutica, &c.

HÆMATURIA, *Sauv.* gen. 233. *Lin.* 198. *Vog.* 92. *Sag.* gen. 178.

Species: Purulenta, Calculosa, Hæmorrhoidalis, &c.

ORDER V. PROFLUVIA.

GENUS XL. CATARRHUS.

The CATARRH.

Catarrhus, *Sauv.* gen. 186. *Vog.* 98. *Sag.* gen. 145.

Coryza, *Lin.* 174. *Vog.* 100. *Sag.* gen. 196.

Rheuma, *Sauv.* gen. 142.

Tussis, *Sauv.* gen. 142. *Lin.* 155. *Vog.* 205. *Sag.* gen. 245. 255. *Junck.* 30.

Tussis catarrhalis et rheumatica, *Hoffm.* III. 109.

Sp. I. Catarrh from COLD.

Catarrhus a frigore, *Cul.*

Catarrhus benignus, *Sauv.* sp. 1.

Catarrhus pectoris, *Sauv.* sp. 6.

Coryza catarrhalis, *Sauv.* sp. 1.

Coryza phlegmatorrhagia, *Sauv.* sp. 2. *Salmuth.*

Obf. cent. 1. 37. *Junck.* 28. *Morgagn.* de sed. xiv. 21.

Coryza febricosa, *Sauv.* sp. 6.

Tussis catarrhalis, *Sauv.* sp. 1. *N. Rosen* Diff. apud *Haller*, Disput. Pract. tom. II.

Rheuma catarrhale, *Sauv.* sp. 1.

Amphimerina catarrhalis, *Sauv.* sp. 2.

Amphimerina tussiculosa, *Sauv.* sp. 13.?

Cephalalgia catarrhalis, *Sauv.* sp. 10.

Sp. II. Catarrh from CONTAGION.

Catarrhus a contagio, *Cul.*

Catarrhus epidemicus, *Sauv.* sp. 3.

Rheuma epidemicum, *Sauv.* sp. 2.

Synocha catarrhalis, *Sauv.* sp. 5.

There are several symptomatic species: as, Catarrhus Rubeolofus; Tussis Variolosa, Verminosa, Calculosa, &c.

VOL. XI. Part I.

lofa, Phthifica, Hystrica, a dentitione, Gravidarum, Metallicularum, &c.

Description. The catarrh is an increased excretion of mucus from the mucous membrane of the nose, fauces, and bronchiæ, attended with pyrexia.

Practical writers and nosologists have distinguished the disease by different appellations, according as it happens to affect different parts of the mucous membrane, one part more or less than the other: but Dr Cullen is of opinion that the disease in those different parts is always of the same nature, and proceeds from the same cause in the one as in the other. Very commonly indeed those different parts are affected at the same time; and therefore there is little room for the distinction mentioned. The disease has been frequently treated of under the title of *tussis* or *cough*; and a cough, indeed, always attends the chief form of catarrh, that is, the increased excretion from the bronchiæ; but as it is so often also a symptom of many other affections, which are very different from one another, it is improperly used as a generic title.

The disease generally begins with some difficulty of breathing through the nose, and with a sense of some fulness stopping up that passage. This again is often attended with some dull pain and a sense of weight in the forehead, as well as a stiffness in the motion of the eyes. These feelings, sometimes at their very first beginning, and always soon after, are attended with the distillation of a thin fluid from the nose, and sometimes from the eyes; and these fluids are often found to be somewhat acrid, both by their taste and by their fretting the parts over which they pass. These symptoms constitute the coryza and gravedo of authors, and are commonly attended with a sense of lassitude over the whole body. Sometimes cold shiverings are felt; at least the body is more sensible than usual to the coldness of the air; and with all this the pulse is more frequent than ordinary, especially in the evenings.

These symptoms have seldom continued long before they are accompanied with some hoarseness, and a sense of roughness and soreness in the trachea, with some difficulty of breathing, expressed by a sense of straitness in the chest, and with a cough which seems to arise from some irritation felt at the glottis. This cough is generally at first dry and painful, occasioning pains about the chest, and more especially in the breast; sometimes, together with these symptoms, pains resembling those of the rheumatism are felt in several parts of the body, particularly about the neck and head. With all these symptoms, the appetite is impaired, some thirst arises, and a feverish lassitude is felt all over the body. These symptoms mark the height and violence of the disease; but commonly it does not continue long. By degrees the cough comes to be attended with a more copious excretion of mucus; which is at first thin, but gradually becoming thicker, is brought up with less frequent and less laborious coughing. The hoarseness and soreness of the trachea are also relieved or removed; and the febrile symptoms abating, the expectoration becomes again less, and the cough less frequent, till at length they cease altogether.

Such is generally the course of this disease, neither tedious

G g

Profluvia

tedious nor dangerous; but it is sometimes in both respects otherwise. The body affected with catarrh seems to be more than usually liable to be affected by cold air; and upon exposure of the body to fresh cold, the disease, which seemed to be yielding, is often brought back with greater violence than before, and is rendered not only more tedious than otherwise it would be, but also more dangerous by the supervening of other diseases. Some degree of the cynanche tonsillaris often accompanies the catarrh; and when this is aggravated by a fresh application of cold, the cynanche also becomes more violent and dangerous from the cough, which is present at the same time. When a catarrh has been occasioned by a violent cause, when it has been aggravated by improper management, and especially when it has been rendered more violent by fresh and repeated applications of cold, it often passes into a pneumonic inflammation, attended with the utmost danger.

Unless, however, such accidents as those happen, a catarrh, in sound persons not far advanced in life, is always a slight and safe disease: but, in persons of a phthisical disposition, a catarrh may readily produce a hemoptysis, or perhaps form tubercles in the lungs; and still more readily in persons who have tubercles already formed in the lungs, an accidental catarrh may occasion the inflammation of these tubercles, and in consequence produce a phthisis pulmonalis.

In elderly persons, a catarrh sometimes proves a dangerous disease. Many persons, as they advance in life, and especially after they have arrived at old age, have the natural mucus of the lungs poured out in greater quantity, and requiring a frequent expectoration. If, therefore, a catarrh happen to such persons, and increase the afflux of fluids to the lungs, with some degree of inflammation, it may produce the peripneumonia notha, or more properly chronic catarrh, a disease continuing often for many years, or at least regularly every winter; which in such cases is very often fatal.

Causes, &c. The proximate cause of catarrh seems to be an increased afflux of fluids to the mucous membrane of the nose, fauces, and bronchiæ, along with some degree of inflammation affecting the same. The latter circumstance is confirmed by this, that, in the case of catarrh, the blood drawn from a vein commonly exhibits the same inflammatory crust which appears in the case of phlegmasiæ. The remote cause of catarrh is most commonly cold applied to the body. This application of cold producing catarrh is generally evident and observed; and Dr Cullen is of opinion that it would always be so, were men acquainted with and attentive to the circumstances which determine cold to act upon the body.

The application of cold which occasions a catarrh, probably operates by stopping the perspiration usually made by the skin, and which is therefore determined to the mucous membrane of the parts above-mentioned. As a part of the weight which the body daily loses by insensible evacuation, is owing to an exhalation from the lungs, there is probably a connection between this exhalation and the cutaneous perspiration, so that the one may be increased according as the other is diminished; and therefore we may understand

how the diminution of cutaneous perspiration, by the application of cold, may increase the afflux of fluids to the lungs, and thereby produce a catarrh.

Dr Cullen observes that there are some observations of Dr James Keil which may render this matter doubtful; but says there is a fallacy in those observations. The evident effects of cold in producing coryza, leave the matter, in general, without doubt; and there are several other observations which show a connection between the lungs and the surface of the body.

Whether from the suppression of perspiration, a catarrh be produced merely by an increased afflux of fluids, or whether in addition to this the matter of perspiration be at the same time determined to the mucous glands, and there excites a particular irritation, may be uncertain; but Dr Cullen thinks the latter supposition is most probable.

Although in the case of a common catarrh, which is in many instances sporadic, it may be doubtful whether any morbid matter be applied to the mucous glands; we are, however, certain that the symptoms of a catarrh do frequently depend upon such a matter being applied to these glands, as appears from the case of measles, chincough, and especially from the frequent occurrence of contagious and epidemical catarrh.

The phenomena of contagious catarrhs have been much the same with those of the others; and the disease has always been particularly remarkable for this, that it has been the most widely and generally spreading-epidemic known. It has seldom appeared in any one country of Europe, without appearing successively in almost every different part of it; and, in some instances, it has been also transferred to America, and has been spread there in like manner, so far as we have had opportunities of being informed.

The catarrh from contagion appears with nearly the same symptoms as those above-mentioned. It seems often to come on in consequence of the application of cold. And indeed catarrh from cold and contagion are in every respect so similar, that when this epidemic rages, it is impossible to determine with a person having symptoms of catarrh after exposure to cold, whether the disease proceeds from the one cause or the other. In most instances, however, catarrh from contagion comes on with more cold shivering than the catarrh arising from cold alone; and the former does also not only sooner show febrile symptoms, but to a more considerable degree. Accordingly, it more speedily runs its course, which is commonly finished in a few days. It sometimes ends by a spontaneous sweat; and this, in some persons, produces a miliary eruption. It is, however, the febrile state of this disease especially that is finished in a few days; for the cough and other catarrhal symptoms do frequently continue longer, and often when they appear to be going off they are renewed by any fresh application of cold.

Prognosis. Considering the number of persons who are affected with catarrh, of either the one species or the other, and escape from it quickly without any hurt, it may be allowed to be a disease commonly free from danger; but it is not always to be treated as such, for

Profluvia for in some persons it is accompanied with pneumonic inflammation. In the phthically disposed, it often accelerates the coming on of phthisis; and in elderly persons it often proves fatal in the manner we have explained above, viz. by degenerating into its chronic state. But though chronic catarrh be often the termination of that species which arises from cold, we have not, in any case, observed it to arise as a consequence of a catarrh from contagion. This species of catarrh, however, is not unfrequently followed by phthisis; or rather where a phthical tendency before existed, the affection has been begun and its progress accelerated from this cause.

Cure. The cure of catarrh is nearly the same, whether it proceeds from cold or contagion; only in the latter case remedies are commonly more necessary than in the former. In the cases of a moderate disease, it is commonly sufficient to avoid cold, or to abstain from animal-food for some days. In some cases, where the febrile symptoms are considerable, it is proper for that length of time to lie a-bed, and, by taking frequently some mild and diluent drink, a little warmed, to promote a very gentle sweat; and after this to take care to return very gradually only to the use of the free air. When the disease is more violent, not only the antiphlogistic regimen, exactly observed, but various remedies also, become necessary. To take off the phlogistic diathesis which always attends this disease, blood-letting, more or less, according as the symptoms shall require, is the proper remedy. After blood-letting, for restoring the determination of the fluids to the surface of the body, and at the same time for expediting the secretion of mucus in the lungs, which may take off the inflammation of its membrane, vomiting is the most effectual means. For the last-mentioned purpose, it has been supposed that squills, gum-ammoniac, the volatile alkali, and some other medicines, might be useful; but their efficacy has never been found considerable: and if squills have ever been very useful, it seems to have been rather by their emetic than by their expectorant powers. When the inflammatory affections of the lungs seem to be considerable, it is proper, besides blood-letting, to apply blisters to the back or sides.

As a cough is often the most troublesome circumstance of this disease, so demulcents may be employed to alleviate it. But after the inflammatory symptoms are much abated, if the cough still remains, opiates afford the most effectual means of relieving it; and, in the circumstances just now mentioned, they may be very safely employed. Very considerable advantage is often derived from employing opiates in such a manner as to act more immediately on the head of the wind-pipe. For this purpose, opium may often be advantageously conjoined with demulcents, melting slowly in the mouth. And perhaps no form is more convenient, or answers the purpose better, than the *trochisci glycyrrhizæ cum opio* of the Edinburgh Pharmacopœia, where purified opium is combined with extract of liquorice, gum Arabic, and other demulcents, to the extent of about a grain in a dram of the composition. After the inflammatory and febrile states of this disease are very much gone, the most effectual means of discussing all remains of the catarrhal

affection is by some exercise of gestation diligently employed.

Besides the remedies above-mentioned, Dr Mudge, in a treatise on this disease, recommends the steam of warm water as a most efficacious and safe remedy for a catarrh, and which indeed he seems to consider as little less than *infallible*. The method of breathing in these steams is described under the word *INHALER*; but he gives a caution to people in health, who may accidentally see his machine, not to make the experiment of breathing through cold water with it, or they will be almost certain of catching a severe cold. His directions for those troubled with the catarrh are as follow:

“ In the evening, a little before bed-time, the patient, if of adult age, is to take three drachms, or as many tea-spoonfuls, of elixir paregoricum, in a glass of water: if the subject be younger, for instance under five years old, one tea-spoonful; or within that and ten years, two. About three quarters of an hour after, the patient should go to bed, and, being covered warm, the inhaler three parts filled with water nearly boiling (which, from the coldness of the metal, and the time it ordinarily takes before it is to be used by the patient, will be of a proper degree of warmth), and being wrapped up in a napkin, but so that the valve in the cover is not obstructed by it, is to be placed at the arm-pit, and the bed-clothes being drawn up and over it close to the throat, the tube is to be applied to the mouth, and the patient should inspire and expire through it for about twenty minutes or half an hour.

“ It is very evident, as the whole act of respiration is performed through the machine, that in inspiration the lungs will be filled with air which will be hot, and loaded with vapour, by passing through the body of water; and in expiration, all that was contained in the lungs will, by mixing with the steam on the surface of the water, be forced thro’ the valve in the cover, and settle on the surface of the body under the bed-cloaths.

“ The great use of this particular construction of the inhaler is this. First, as there is no necessity, at the end of every inspiration, to remove the tube from the mouth, in order to expire from the lungs the vapour which had been received into them, this machine may therefore be used with as much ease by children as older people. And, secondly, as a feverish habit frequently accompanies the disorder, the valve in that respect also is of the utmost importance: for a sweat, or at least a free perspiration, not only relieves the patient from the restless anxiety of a hot, dry, and sometimes parched skin, but is also, of all evacuations, the most eligible for removing the fever; and it will be generally found, that, after the inhaler so constructed has been used a few minutes, the warm vapour under the cloaths will, by settling upon the trunk, produce a sweat, which will gradually extend itself to the legs and feet.

“ In a catarrhus fever, or any feverish habit attending this cough, it would be proper to take a draught of warm thin whey a few minutes before the inhaler be used; and after the process is over, the sweat which it has produced may be continued by occasional

Profluvia small draughts of weak warm whey or barley-water. The sweating is by no means so necessary to the cure of the catarrhus cough, as that the success of the inhaler against that complaint at all depends upon it; yet I cannot help once more remarking, that when this disorder happens to be accompanied with a feverish habit, the advantages of this particular construction will be very important.

"After this respiratory process is over, the patient usually passes the night without the least interruption from the cough, and feels no farther molestation from it than once or twice in the morning to throw off the trifling leakage which, unperceived, had dripped into the bronchiæ and vesicles during the night; the thinner parts of which being evaporated, what remains is soon got rid of with a very gentle effort.

"I cannot, however, take leave of this part of my subject, without pointedly observing, that if the patient means not to be disappointed by my assurances or his own expectations, it is essentially necessary that the following remarks, with regard to the time and manner of using this process, should be strictly attended to.

"First, That as tender valetudinary people are but too well acquainted with the first notices of the disorder, the remedy must, or ought to be, used the same evening; which will, in an ordinary seizure, be attended with an immediate cure: but if the soreness of the respiratory organs, or the petulance of the cough, show the cold which has been contracted to have been very severe, the inhaler, without the opiate, should be again repeated for the same time the next morning.

"Secondly, if the use of the inhaler, &c. be delayed till the second night, it will be always right to repeat it again the next morning without the opiate, but with it if the seizure has been violent.

"And, lastly, if the cough be of some days standing, it will be always necessary to employ both parts of the process at night and the succeeding morning, as the first simple inflammatory mischief is now most probably aggravated by an additional one of a chronic tendency.

"But if, through the want of a timely application, or a total neglect of this or any other remedy, the cough should continue to harass the patient, it is, particularly in delicate and tender constitutions, of the utmost consequence to attempt the removal of it as soon as possible, before any floating acrimony in the constitution (from the perpetual irritation) receives an habitual determination to an organ so essential to life as the lungs.

"If the patient expectorate with ease and freedom a thick and well-digested inoffensive phlegm, there is generally but little doubt of his spitting off the disorder, with common care, in a few days; and till that be accomplished, a proper dose of elixir paregoricum for a few successive nights will be found very useful in suppressing the fatiguing irritation and ineffectual cough, occasioned by a matter which, dripping in the early state of the disease into the bronchiæ during the night, is commonly at that time too thin to be discharged by those convulsive efforts.

"If, however, notwithstanding a free and copious expectoration, the cough should still continue, and the discharge, instead of removing the complaint, should

itself, by becoming a disease, be a greater expence than the constitution can well support, it is possible that a tender patient may spit off his life through a weak, relaxed pair of lungs, without the least appearance of purulence, or any suspicion of suppuration. In those circumstances, besides, as was mentioned before, increasing the general perspiration by the salutary friction of a flannel waistcoat, change of situation, and more especially long journeys on horseback, conducted as much as possible through a thin, sharp, dry air, will seldom fail of removing the complaint.

"But, on the contrary, if the cough should, at the same time that it is petulant and fatiguing to the breast, continue dry, husky, and without expectoration; provided there be reason to hope that no tubercles are forming, or yet actually formed, there is not perhaps a more efficacious remedy for it than half a drachm of gum ammoniacum, with 18 or 20 drops of liquid laudanum, made into pills, and taken at bedtime, and occasionally repeated. This excellent remedy Sir John Pringle did me the honour to communicate to me; and I have accordingly found it, in a great many instances, amazingly successful, and generally very expeditiously so; for it seldom fails to produce an expectoration, and to abate the distressing fatigue of the cough. In those circumstances I have likewise found the common remedy of ʒss or ʒij of *bals. sulph. anifat.* taken twice a-day, in a little powdered sugar or any other vehicle, a very efficacious one. I have also, many times, known a salutary revulsion made from the lungs by the simple application of a large plaster, about five or six inches diameter, of Burgundy pitch between the shoulders; for the perspirable matter, which is locked up under it, becomes so sharp and acrid, that in a few days it seldom fails to produce a very considerable itching, some little tendency to inflammation, and very frequently a great number of boils. This application should be continued (the plaster being occasionally changed), for three weeks or a month, or longer, if the complaint be not so soon removed.

"And here I cannot help observing, that, though seemingly a trifling, it is however by no means a useless caution to the tender patient, not to expose his shoulders in bed, and during the night, to the cold; but when he lies down to take care they be kept warm, by drawing the bed-cloaths up close to his back and neck.

"If, however, notwithstanding these and other means, the cough, continuing dry or unattended with a proper expectoration, should persevere in harassing the patient; if, at last, it should produce, together with a soreness, shooting pains through the breast and between the shoulders, attended also with shortness of the breath; and if, added to this, flushes of the cheeks after meals, scalding in the hands and feet, and other symptoms of a hectic, should accompany the disorder; there is certainly no time to be lost, as there is the greatest reason to apprehend that some acrimony in the habit is determined to the tender substance of the lungs, and that consequently tubercular suppurations will follow. In this critical and dangerous situation, I think I can venture to say from long experience, that, accompanied with change of air and occasional bleedings, the patient will find his greatest security

Profluvia curity in a drain from a large scapulary issue, assisted by a diet of asses milk and vegetables."

GENUS XLI. DYSENTERIA.

The DYSENTERY.

254

Dysenteria, *Sauv.* gen. 248. *Lin.* 191. *Vog.* 107. *Sag.* 183. *Hoffm.* III. 151. *Junc.* 76.

Description. The dysentery is a disease in which the patient has frequent stools, accompanied with much griping, and followed by a tenesmus. The stools, though frequent, are generally in small quantity; and the matter voided is chiefly mucus, sometimes mixed with blood. At the same time, the natural fæces seldom appear; and when they do, it is generally in a compact and hardened form, often under the form of small hard substances known by the name of *scybalæ*. This disease occurs especially in summer and autumn, at the same time with autumnal intermittent and remittent fevers; and with these it is often complicated. It comes on sometimes with cold shiverings, and other symptoms of pyrexia; but more commonly the symptoms of the topical affection appear first. The belly is costive, with an unusual flatulence in the bowels. Sometimes, though more rarely, some degree of diarrhœa is the first appearance.—In most cases, the disease begins with griping, and a frequent inclination to go to stool. In indulging this, little is voided, but some tenesmus attends it. By degrees the stools become more frequent, the griping more severe, and the tenesmus more considerable.—With these symptoms there is a loss of appetite, and frequently sickness, nausea, and vomiting, also affecting the patient. At the same time there is always more or less of pyrexia present. It is sometimes of the remittent kind, and observes a tertian period.—Sometimes the pyrexia is manifestly inflammatory, and very often of a putrid kind. These febrile states continue to accompany the disease during its whole course, especially when it terminates soon in a fatal manner. In other cases, the febrile state almost entirely disappears, while the proper dysenteric symptoms remain for a long time after. In the course of the disease, whether for a shorter or a longer time, the matter voided by stool is very various. Sometimes it is merely a mucous matter, without any blood, exhibiting that disease which is named by some the *morbus mucosus*, and by others the *dysenteria alba*. For the most part, however, the mucus discharged is more or less mixed with blood. This sometimes appears only in streaks among the mucus; but at other times is more copious, giving a tinct to the whole; and upon some occasions a pure and unmixed blood is voided in considerable quantity. In other respects, the matter voided is variously changed in colour and consistence, and is commonly of a strong and unusually fetid odour. It is probable, that sometimes a genuine pus is voided, and frequently a putrid sanies, proceeding from gangrenous parts. There are very often mixed with the liquid matter some films of a membranous appearance, and frequently some small masses of a seemingly sebaceous matter. While the stools voiding these various matters are, in many instances, exceedingly frequent, it is seldom that natural fæces appear in them; and when they do appear, it is, as we have said, in the form of *scybalæ*, that is, in somewhat hardened, se-

parate balls. When these are voided, whether by the efforts of nature or as solicited by art, they procure a remission of all the symptoms, and more especially of the frequent stools, griping, and tenesmus.

Accompanied with these circumstances, the disease proceeds for a longer or a shorter time. When the pyrexia attending it is of a violent inflammatory kind, and more especially when it is of a very putrid nature, the disease often terminates fatally in a very few days, with all the marks of a supervening gangrene. When the febrile state is more moderate, or disappears altogether, the disease is often protracted for weeks, and even for months; but, even then, after a various duration, it often terminates fatally, and generally in consequence of a return and considerable aggravation of the inflammatory and putrid states. In some cases, the disease ceases spontaneously; the frequency of stools, the griping, and tenesmus, gradually diminishing, while natural stools return. In other cases, the disease, with moderate symptoms, continues long, and ends in a diarrhœa, sometimes accompanied with enteric symptoms.

Causes, &c. The remote causes of this disease have been variously judged of. It generally arises in summer or autumn, after considerable heats have prevailed for some time, and especially after very warm and at the same time very dry states of the weather; and the disease is much more frequent in warm than in cooler climates. It happens, therefore, in the same circumstances and seasons which considerably affect the state of the bile in the human body: but the cholera is often without any dysenteric symptoms, and copious discharges of bile have been found to relieve the symptoms of dysentery; so that it is difficult to determine what connection the disease has with the state of the bile.

It has been observed, that the effluvia from very putrid animal-substances readily affect the alimentary canal, and, upon occasion, they certainly produce a diarrhœa; but whether they ever produce a genuine dysentery, is not certain.

The dysentery does often manifestly arise from the application of cold, but the disease is always contagious; and, by the propagation of such contagion, independent of cold, or other exciting causes, it becomes epidemic in camps and other places. It is, therefore, to be doubted if the application of cold ever produces the disease, unless where the specific contagion has been previously received into the body; and, upon the whole, it is probable that a specific contagion is to be considered as being always the remote cause of this disease.

Whether this contagion, like many others, be of a permanent nature, and only shows its effects in certain circumstances which render it active, or if it be occasionally produced, we cannot determine. Neither, if the latter supposition be received, can we say by what means it may be generated. As little do we know any thing of its nature, considered in itself; or at most, only this, that, in common with many other contagions, it is very often somewhat of a putrid nature, and capable of inducing a putrescent tendency in the human body. This, however, does not at all explain the peculiar effect of inducing those symptoms which properly and essentially constitute dysentery. Of these symptoms the proximate cause is still obscure.—

The

Profluvia

The common opinion has been, that the disease depends upon an acrid matter thrown upon or somehow generated in the intestines, exciting their peristaltic motion, and thereby producing the frequent stools which occur in this disease. But this supposition cannot be adopted; for, in all the instances known, of acrid substances applied to the intestines, and producing frequent stools, they at the same time produce copious stools, as might be expected from acrid substances applied to any length of the intestines. This, however, is not the case in dysentery, in which the stools, however frequent, are generally in very small quantity, and such as may be supposed to proceed from the lower parts of the rectum only. With respect to the superior portions of the intestines, and particularly those of the colon, it is probable they are under a preternatural and considerable degree of constriction: for, as we have said above, the natural fæces are seldom voided; and when they are, it is in a form which gives reason to suppose they have been long retained in the cells of the colon, and consequently that the colon had been affected with a preternatural constriction. This is confirmed by almost all the dissections which have been made of the bodies of dysenteric patients; in which, when gangrene had not entirely destroyed the texture and form of the parts, large portions of the great guts have been found affected with a very considerable constriction.

The proximate cause of dysentery, or at least the chief part of the proximate cause, seems to consist in a preternatural constriction of the colon, occasioning, at the same time, those spasmodic efforts which are felt in severe gripings, and which efforts, propagated downwards to the rectum, occasion there the frequent mucous stools and tenesmus. But whether this explanation shall be admitted or not, it will still remain certain, that hardened fæces, retained in the colon, are the cause of the griping, frequent stools, and tenesmus: for the evacuation of these fæces, whether by nature or by art, gives relief from the symptoms mentioned; and it will be more fully and usefully confirmed by this, that the most immediate and successful cure of dysentery is obtained by an early and constant attention to the preventing the constriction, and the frequent stagnation of fæces in the colon.

Cure. In the early periods of this disease, the objects chiefly to be aimed at are the following: The discharge of acrid matter deposited in the alimentary canal; the counteracting the influence of this matter when it cannot be evacuated; the obviating the effects resulting from such acrid matter as can neither be evacuated nor destroyed; and, finally, the prevention of any further separation and deposition of such matter in the alimentary canal. In the more advanced periods of the disease, the principal objects are, the giving a proper defence to the intestines against irritating causes; the diminution of morbid sensibility of the intestinal canal; and the restoration of due vigour to the system in general, but to the intestines in particular.

The most eminent of our late practitioners, and of greatest experience in this disease, seem to be of opinion, that it is to be cured most effectually by purging, assiduously employed. The means may be various; but the most gentle laxatives are

usually sufficient; and, as the medicine must be frequently repeated, these are the most safe, more especially as an inflammatory state so frequently accompanies the disease. Whatever laxatives produce an evacuation of natural fæces, and a consequent remission of the symptoms, will be sufficient to effectuate the cure. But if the gentle laxatives shall not produce the evacuation now mentioned, somewhat more powerful must be employed; and Dr Cullen has found nothing more proper or convenient than tartar emetic, given in small doses, and at such intervals as may determine its operation to be chiefly by stool. To the antimonial tartar, however, employed as a purgative, the great sickness which it is apt to occasion, and the tendency which it has, notwithstanding every precaution, to operate as an emetic, are certainly objections. Another antimonial, at one time considered as an almost infallible remedy for this disease, the vitrum antimonii ceratum, is no less exceptionable, from the uncertainty and violence of its operation; and perhaps the safest and best purgatives are the different neutral salts, particularly those containing fossil alkali, such as the soda vitriolata tartarifata or phosphorata. Rhubarb, so frequently employed, is, he thinks, in several respects, amongst the most unfit purgatives; and indeed from its astringent quality, it is exceptionable at the commencement of the affection, unless it be conjoined with something to render its operation more brisk, such as mild muriated mercury, or calomel as it is commonly called.

Vomiting has been held a principal remedy in this disease; and may be usefully employed in the beginning, with a view to both the state of the stomach and of the fever: but it is not necessary to repeat it often; and, unless the emetics employed operate also by stool, they are of little service. Ipecacuanha is by no means a specific; and it proves only useful when so managed as to operate chiefly by stool.

For relieving the constriction of the colon, and evacuating the retained fæces, glysters may sometimes be useful; but they are seldom so effectual as laxatives given by the mouth; and acrid glysters, if they be not effectual in evacuating the colon, may prove hurtful by stimulating the rectum too much.

The frequent and severe griping attending this disease, leads almost necessarily to the use of opiates; and they are very effectual for the purpose of relieving from the gripes: but, by occasioning an interruption of the action of the small intestines, they favour the constriction of the colon, and thereby aggravate the disease; and if, at the same time, the use of them supersede in any measure the employing purgatives, it is doing much mischief; and the neglect of purging seems to be the only thing which renders the use of opiates very necessary.

When the gripes are both frequent and severe, they may sometimes be relieved by the employment of the semicupium, or by fomentation of the abdomen continued for some time. In the same case, the pains may be relieved, and the constriction of the colon may be taken off, by blisters applied to the lower belly.

At the beginning of this disease, when the fever is any way considerable, blood-letting, in patients of tolerable

Profluvia tolerable vigour, may be proper and necessary; and, when the pulse is full and hard, with other symptoms of an inflammatory disposition, blood-letting ought to be repeated. But, as the fever attending dysentery is often of the typhoid kind, or does, in the course of the disease, become soon of that nature, blood-letting must be cautiously employed.

From our account of the nature of this disease, it will be sufficiently obvious, that the use of astringents in the beginning of it must be very pernicious. But although astringents may be hurtful at early periods of this affection, yet it cannot be denied, that where frequent loose stools remain after the febrile symptoms have subsided, they are often of great service for diminishing morbid sensibility, and restoring due vigour to the intestinal canal. Accordingly, on this ground a variety of articles have been highly celebrated in this affection; among others we may mention the quassia, radix indica lopeziana, verbascum, extractum catechu, and gum kino, all of which have certainly in particular cases been employed with great advantage. And perhaps also, on the same principles, we are to account for the benefit which has been sometimes derived from the nux vomica, a remedy highly extolled in cases of dysentery by some of the Swedish physicians; but this article, it must be allowed, often proves very powerful as an evacuant. Its effects, however, whatever its mode of operation may be, are too precarious to allow its ever being introduced into common practice; and in this country, it has, we believe, been but very rarely employed. Whether an acrid matter be the original cause of the dysentery, may be uncertain; but, from the indigestion, and the stagnation of fluids, which attend the disease, we may suppose that some acrid matters are constantly present in the stomach and intestines; and therefore that demulcents may be always usefully employed. At the same time, from the consideration that mild oily matters thrown into the intestines in considerable quantity always prove laxative, Dr Cullen is of opinion, that the oleaginous demulcents are the most useful. Where, however, these are not acceptable to the patient's taste, those of the mucilaginous and farinaceous kind, as the decoctum hordei, potio cretacea, &c. are often employed with advantage.

As this disease is so often of an inflammatory or of a putrid nature, it is evident that the diet employed in it should be vegetable and acescent. Milk, in its entire state, is of doubtful quality in many cases; but even some portion of the cream is often allowable, and whey is always proper.—In the first stages of the disease, the sweet and subacid fruits are allowable, and even proper. It is in the more advanced stages only that any morbid acidity seems to prevail in the stomach, and to require some reserve in the use of acescents. At the beginning of the disease, absorbents seem to be superfluous; and, by their astringent and septic powers, they may be hurtful; but in after periods they are often of advantage.

When this disease is complicated with an intermittent, and is protracted from that circumstance chiefly, it is to be treated as an intermittent, by administering the Peruvian bark, which in the earlier periods of the disease is hardly to be admitted.

CLASS II. NEUROSES.

ORDER I. COMATA.

COMATA, *Sauv.* Class VI. Ord. II. *Sag.* Class IX. Ord. V.

Soporosi, *Lin.* Class VI. Ord. II.

Adynamia, *Vog.* Class VI.

Nervorum resolutiones, *Hoffm.* III. 194.

Affectus soporosi, *Hoffm.* III. 209.

Motuum vitalium defectus, *Junck.* 114.

Genus XLII. APOPLEXIA.

The APOPLEXY.

255

Apoplexia, *Sauv.* gen. 182. *Lin.* 101. *Vog.* 229. *Boerb.* 1007. *Junck.* 117. *Sag.* gen. 288. *Wepfer.* Hist. apoplecticorum.

Carus, *Sauv.* gen. 181. *Lin.* 100. *Vog.* 231. *Boerb.* 1045. *Sag.* gen. 287.

Cataphora, *Sauv.* gen. 180. *Lin.* 99. *Vog.* 232. *Boerb.* 1048. *Sag.* gen. 286.

Coma, *Vog.* 232. *Boerb.* 1048.

Hæmorrhagia cerebri, *Hoffm.* II. 240.

To this genus also Dr Cullen reckons the following diseases to belong.

Catalepsis, *Sauv.* gen. 176. *Lin.* 129. *Vog.* 230. *Sag.* gen. 281. *Boerb.* 1036. *Junck.* 44.

Affectus cerebri spasmodico-ecstasius, *Hoffm.* III. 44.

Ecstasis, *Sauv.* gen. 177. *Vog.* 333. *Sag.* gen. 283.

The following he reckons symptomatic.

Typhomania, *Sauv.* gen. 178. *Lin.* 97. *Vog.* 23. *Sag.* gen. 284.

Lethargus, *Sauv.* gen. 179. *Lin.* 98. *Vog.* 22. *Sag.* gen. 285.

This disease appears under modifications so various, as to require some observations with respect to each.

Sp. I. The Sanguineous APOPLEXY.

256

Description. In this disease the patients fall suddenly down, and are deprived of all sense and voluntary motion, but without convulsions. A giddiness of the head, noise in the ears, corruscations before the eyes, and redness of the face, usually precede. The distinguishing symptom of the disease is a deep sleep, attended with violent snoring; if any thing be put into the mouth, it is returned through the nose; nor can any thing be swallowed without shutting the nostrils; and even when this is done, the person is in the utmost danger of suffocation. Sometimes apoplectic patients will open their eyes after having taken a large dose of an emetic; but if they show no sign of sense, there is not the least hope of their recovery. Sometimes the apoplexy terminates in an hemiplegia; in which case it comes on with a distortion of the mouth towards the sound side, a drawing of the tongue the same way, and stammering of the speech. Dissections sometimes show a rupture of some vessels of the meninges, or even vessels of the brain itself; though sometimes, if we may believe Dr Willis, no defect

Comata

defect is to be observed either in the cerebrum or cerebellum.

Causes, &c. The general cause of a sanguineous apoplexy is a plethoric habit of body, with a determination to the head. The disease therefore may be brought on by whatever violently urges on the circulation of the blood; such as surfeits, intoxication, violent passions of the mind, immoderate exercise, &c. It takes place, however, for the most part, when the venous plethora has subsisted for a considerable time in the system. For that reason it commonly does not attack people till past the age of 60; and that whether the patients are corpulent and have a short neck, or whether they are of a lean habit of body. Till people be past the age of childhood, apoplexy never happens.

Prognosis. This disease very often kills at its first attack; and few survive a repetition of the fit; so that those who make mention of people who have survived several attacks of the apoplexy, have probably mistaken the epilepsy for this disease. In no disease is the prognosis more fatal; since those who seem to be recovering from a fit, are frequently and suddenly carried off by its return, without either warning of its approach or possibility of preventing it. The good signs are when the disease apparently wears off, and the patient evidently begins to recover; the bad ones are when all the symptoms continue and increase.

Cure. The great object to be aimed at, is to restore the connection between the sentient and corporeal parts of the system; and when interruption to this connection proceeds from compression in the brain by blood, this is to be attempted, in the first place, by large and repeated bleedings; after which, the same remedies are to be used as in the serous apoplexy, after-mentioned. The body is to be kept in a somewhat erect posture, and the head supported in that situation.

257

Sp. II. The Serous APOPLEXY.

Apoplexia pituitosa, *Sauv.* sp. 7. Apoplexia serosa, *Preysinger*, sp. 4. *Morg.* de causis, &c. IV. LX.
Carus a hydrocephalo, *Sauv.* sp. 16.
Cataphora hydrocephalica, *Sauv.* sp. 6.
Cataphora somnolenta, *Sauv.* sp. 1.
Lethargus literatorum, *Sauv.* 7. *Van Swieten* in Aphor. 1010. 2^a and 3^a.

Description. In this species the pulse is weak, the face pale, and there is a diminution of the natural heat. On dissection, the ventricles of the brain are found to contain a larger quantity of fluid than they ought; the other symptoms are the same as in the former.

Causes, &c. This may arise from any thing which induces a debilitated state of the body, such as depressing passions of the mind, much study, watching, &c. It may also be brought on by a too plentiful use of diluting, acidulated drinks. It doth not, however, follow, that the extravasated serum above mentioned in the ventricles of the brain is always the cause of the disease, since the animal-humours are very frequently observed to ooze out in plenty through the coats of the containing vessels after death, though no extravasation took place during life.

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Prognosis. This species is equally fatal with the Apoplexy other; and what hath been said of the prognosis of the sanguineous, may also be said of that of the serous, apoplexy.

Cure. In this species venesection can scarcely be admitted: acrid purgatives, emetics, and stimulating clysters, are recommended to carry off the superabundant serum; but in bodies already debilitated, they may perhaps be liable to the same exceptions with venesection itself. Volatile salts, cephalic elixirs, and cordials, are also prescribed; and in case of a hemiplegia supervening, the cure is to be attempted by aperient ptisans, cathartics, and sudorifics; gentle exercise, as riding in a carriage; with blisters and such stimulating medicines as are in general had recourse to in affections originally of the paralytic kind.

Sp. III. Hydrocephalic APOPLEXY, or Dropsy of the Brain.

258

Hydrocephalus interior, *Sauv.* sp. 1.

Hydrocephalus internus, *Whytt's* works, pag. 725.

London Med. Obs. vol. iv. art. 3, 6, and 25.

Gaudelius de hydrocephalo, apud *Sandisort* Thesaur. vol. ii.

Hydrocephalus acutus, *Quin, Diff.* de hydrocephalo, 1779.

Asthenia a hydrocephalo, *Sauv.* sp. 3.

History and description. This disease has been accurately treated within these few years by several eminent physicians, particularly the late Dr Whytt, Dr Fothergill, and Dr Watson; who concur in opinion, with respect to the seat of the complaint, the most of its symptoms, and its general fatality. Out of twenty patients that had fallen under Dr Whytt's observation, he candidly owns that he had been so unfortunate as to cure only one who laboured under the characteristic symptoms of the hydrocephalus; and he suspects that those who imagine they have been more successful, had mistaken another distemper for this. It is by all supposed to consist in a dropsy of the ventricles of the brain; and this opinion is fully established by dissections. It is observed to happen more commonly to healthy, active, lively children, than to those of a different disposition.

Dr Whytt supposes that the commencement of this disease is obscure; that it is generally some months in forming; and that, after some obvious urgent symptoms rendering assistance necessary, it continues some weeks before its fatal termination. This, in general, differs from what has hitherto been observed by Dr Fothergill; the latter informing us, that he has seen children, who, from all appearance, were healthy and active, seized with this distemper, and carried off in about 14 days. He has seldom been able to trace the commencement of it above three weeks.

Though the hydrocephalus be most incident to children, it has been sometimes observed in adults; as appears from a case related by Dr Huck, and from some others.

When the disease appears under its most common form, the symptoms at different periods are so various as to lead Dr Whytt to divide the disease into three stages, which are chiefly marked by changes occurring in the condition of the pulse. At the beginning it is quicker

Comata quicker than natural; afterwards it becomes uncommonly slow; and towards the conclusion of the disease it becomes again quicker than natural, but at the same time very irregular.

Those who are seized with this distemper usually complain first of a pain in some part below the head; most commonly about the nape of the neck and shoulders; often in the legs; and sometimes, but more rarely, in the arms. The pain is not uniformly acute, nor always fixed to one place; and sometimes does not affect the limbs. In the latter case, the head and stomach have been found to be most disordered; so that when the pain occupied the limbs, the sickness or head-ach was less considerable; and when the head became the seat of the complaint, the pain in the limbs was seldom or never mentioned. Some had very violent sicknesses and violent head-achs alternately. From being perfectly well and sportive, some were in a few hours seized with those pains in the limbs, or with sickness, or head-ach, in a slight degree, commonly after dinner; but some were observed to droop a few days before they complained of any local indisposition. In this manner they continued three, four, or five days, more or less, as the children were healthy and vigorous. They then commonly complain of an acute deep-seated pain in the head, extending across the forehead from temple to temple; of which, and a sickness, they alternately complain in short and affecting exclamations; dosing a little in the intervals, breathing irregularly, and sighing much while awake. Sometimes their sighs, for the space of a few minutes, are incessant.

As the disease advances, the pulse becomes slower and irregular, the strokes being made both with unequal force and in unequal times, till within a day or two of the fatal termination of the disorder, when it becomes exceeding quick; the breathing being at the same time deep, irregular, and laborious. After the first access, which is often attended with feverish heats, especially towards evening, the heat of the body is for the most part temperate, till at last it keeps pace with the increasing quickness of the pulse. The head and præcordia are always hot from the first attack. The sleeps are short and disturbed, sometimes interrupted by watchfulness; besides which there are startings.

In the first stage of the disease there seems to be a peculiar sensibility of the eyes, as appears from the intolerance of light. But in the progress of the disease a very opposite state occurs: The pupil is remarkably dilated, and cannot be made to contract by the action even of strong light; such, for example, as by bringing a candle very near to it. In many cases there is reason to believe that total blindness occurs: Often also the pupil of one eye is more dilated than that of another, and the power of moving the eyes is also morbidly affected. Those children, who were never observed to squint before, often become affected with a very great degree of strabismus. The patients are unwilling to be disturbed for any purpose, and can bear no posture but that of lying horizontally. One or both hands are most commonly about their heads. The urine and stools come away insensibly. At length the eyelids become paralytic, great heat accompanied with sweat overspreads the whole body, respiration is rendered totally suspirious, the pulse increases in its

trembling undulations beyond the possibility of counting, till the vital motions entirely cease; and sometimes convulsions conclude the scene. **Apoplexia.**

Many of the symptoms above enumerated are so common to worm-cases, teething, and other irritating causes, that it is difficult to fix upon any which particularly characterise this disease. The most peculiar seem to be the pains in the limbs, with sickness and incessant head-ach; which, though frequent in other diseases of children, are neither so uniformly nor so constantly attendant as in this. Another circumstance observed to be familiar, if not peculiar to this distemper, is, that the patients are not only colicive, but it is likewise with the greatest difficulty that stools can be procured. These are generally of a very dark greenish colour with an oiliness or a glassy bile, rather than the slime which accompanies worms; and they are, for the most part, extremely offensive. No positive conclusion can be drawn from the appearance of the urine; it being various, in different subjects, both in its colour and contents, according to the quantity of liquor they drink, and the time between the discharges of the urine. From their unwillingness to be moved, they often retain their water 12 or 15 hours, and sometimes longer. In complaints arising from worms, and in dentition, convulsions are more frequent than in this disorder. Children subject to fits are sometimes seized with them a few days before they die. Sometimes these continue 24 hours incessantly, and till they expire.

Causes. The causes of internal hydrocephalus are very much unknown. Some suppose it to proceed from a rupture of some of the lymphatic vessels of the brain. But this supposition is so far from being confirmed by any anatomical observation, that even the existence of such vessels in the brain is not clearly demonstrated. That lymphatics, however, do exist in the brain, cannot be doubted; and one of the most probable causes giving rise to an accumulation of water in the brain is a diminished action of these. Here, however, as well as in other places, accumulation may also be the consequence of augmented effusion; and in this way, an inflammatory disposition, as some have supposed, may give rise to the affection. But from whatever cause an accumulation of water in the ventricles of the brain may be produced, there can be no doubt that from this the principal symptoms of the disease arise, and that a cure is to be accomplished only by the removal of it. It is, however, probable, that the symptoms are somewhat varied by the position of the water, and that the affection of vision in particular is often the consequence of some morbid state about the *thalami nervorum opticorum*; at least, in many cases, large collections of water in the ventricles have occurred, without either strabismus, intolerance of light, or dilatation of the pupil. And in cases where these symptoms have taken place to a remarkable degree, while upon dissection after death but a very small collection of water was found in the ventricles, it has been observed that a peculiar tumid appearance was discovered about the optic nerves, which upon examination was found to arise from water in the cellular texture. This may have given compression producing a state of insensibility; but it may have been preceded, or it may even have originated from, some inflammatory af-

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Comata fection of these parts, producing the intolerance of light.

Prognosis and Cure. Till very lately this disorder was reckoned totally incurable; but of late it has been alleged, that mercury, if applied in time, will remove every symptom. This remedy was first thought of by Dr Dobson of Liverpool, and afterwards employed apparently with success by Dr Percival and others. The method of exhibiting this medicine in order to effect a cure, as well as the inutility of other medicines, will fully appear from the following cases.

CASE I. By Dr PERCIVAL.

"September 4. 1777. Master H. a child at the breast, aged seven months, has laboured about a fortnight under a slow irregular fever. His eyes have been now and then a little distorted; he has been affected with some degree of stupor; his gums have been inflamed and tender; and his mouth uncommonly dry. No tooth has yet made its appearance. An emetic has been administered; a blister applied to his back; and his belly has been kept soluble by repeated small doses of magnesia. During the action of the blister, he was thought to be much better, but he soon relapsed into his former state.

"About three o'clock this morning he was convulsed: at nine I saw him; and from his countenance instantly suspected a dropsey of the brain. The symptoms confirmed my apprehensions. His skin was hot; yet his pulse beat only 78 strokes in a minute, which were irregular. The pupils of his eyes were considerably, but unequally, dilated; nor did they contract much when a lighted candle was suddenly held before them. He often squinted, especially with the right eye, and seemed to take no notice of any objects around him. He refused the breast, and seldom swallowed till the lips and tongue had been stimulated with a feather. During several days past, he had been frequently observed to rub the end of his nose when his hand was at liberty; and, notwithstanding his stupor, he had been uncommonly watchful. I examined his head, and found a manifest tumor of the bregma, which had never before been noticed. Convinced by all these circumstances that the child laboured under the hydrocephalus internus, and that he was now in the second stage of that disorder, I directed ten grains of the *unguentum mercuriale mitius* to be rubbed into his thighs every three hours, till the mouth should be affected, and a tea-spoonful of the following mixture to be given whenever the convulsive symptoms recurred.

R. *Salis ammon. vol. ℥i. Succ. Lemon. 3vi. Mosch. opt. mucilag. gum. Arabic. solut. gr. vi. Sacch. alb. q. s. ad gratiam. M.*

"Small blisters were applied on each side of the head, just below the bregma; and a folded rag, frequently moistened with brandy, was laid upon the tumor to promote absorption. An emetic had been given early in the morning, by which a large quantity of bile was discharged; and a vesicatory had also been applied to his leg.

"September 5. nine o'clock. The child has had frequent convulsions in the night; his right eye is much distorted; and it has been remarked, that he seldom moves the right hand. The pulse beat 120 strokes in a minute. Two scruples of the mercurial

ointment have been used, and he has taken five grains of musk. A large discharge of serum has been produced by the blisters. Five o'clock, P.M. the tumor of the head is sensibly diminished; the child's mouth is now moist, and often filled with saliva; and his tongue appears to be swollen. His pulse beat 146 strokes in a minute. I directed another blister to be applied to the head.

"September 6. His convulsions have been much slighter; his eyes are frequently distorted; and the pupils of each are more contracted. The stupor is considerably abated; the child seems to take some notice, distinguishes taste, and swallows freely. The musk has been continued; and half a dram more of the mercurial ointment has been consumed. A clyster was injected last night, but ineffectually: I therefore prescribed a grain of jalap, mixed with an equal quantity of sugar, to be given every three hours, till a motion to stool succeeded.

"September 7. The child has passed the night more comfortably, but not free from convulsions. His head has sweated profusely, and the blisters have run much. The tumor of the bregma is considerably reduced. The jalap operated gently last night, and the mercurial unction has been twice repeated. There is an evident mitigation of all the symptoms.

"September 8. About eleven o'clock last night, the child was attacked with severe convulsions, which recurred frequently till six o'clock this morning. He has had a short sleep, and is now composed. His pulse beats 140 strokes in a minute; his heat is moderate; and his skin soft and perspirable. The mercurial ointment has been again used; but, though his gums and tongue are sore and very moist, his breath is not offensive. I directed a grain of calomel to be immediately given, to procure a stool; and a blister to be applied to the occiput.

"September 10. He has passed two nights almost entirely free from convulsions. Ten grains of the mercurial ointment have been again rubbed into his thighs. The dose of calomel occasioned three very offensive stools; and directions are given to repeat it, as he is again costive. The blister applied to the occiput, like the others, has produced a very copious discharge. The tumor of the head is now scarcely perceptible. Pulse 120.

"September 12. At 12 o'clock last night, the convulsions recurred with greater violence than ever, and still continue. Two teeth have almost protruded through the upper, and the same number through the lower gum. Pulse 160, tremulous, and irregular. I directed that the child should be immediately put into a warm bath, and that the following remedies should be administered.

R. *Infus. rad. valer. fortissimi ℥iii.*

Asafetid. electa ℥ss. M. f. Enema statim injiciendum.

R. *Tinct. valer. volat. ℥ii. Dentur guttae jiii. Subinde cochleari parvulo infusi rad. valer. sylv. sub forma theæ parati.*

"The convulsions continued, but with less violence; and the child expired about one o'clock in the afternoon."

On this case the Doctor makes the following observations.

"The deplorable case which I have related appears

Comata appears to have originated from the irregular action produced in the system by dentition, and from the want of a due secretion of saliva in the mouth, by which the fluid discharges were probably increased in the ventricles of the brain. That these discharges were diminished, and that the extravasated water was absorbed, by the powerful action of the mercury, may be presumed from the mitigation of all the symptoms which succeeded the salivation. And I am inclined to believe, that the convulsions under which the child expired were more owing to the irritation of his gums by the protrusion of four teeth, than to any remaining water in the brain; for the tumor of the head had entirely disappeared, and after death there was a manifest depression of the bregma. During the space of a week, 110 grains of the unguentum mercuriale mitius, which contains about 22 grains of mercury, was consumed in the usual way of friction. Perhaps half of this quantity might be absorbed, and carried into the course of circulation; to which may be added, part of the two grains of the calomel administered internally. The symptoms of the salivation were not violent; and the effects of the mercury did not appear formidable or alarming, even to the parents of the child, who were apprised of the nature of the disorder, and fully approved of the trial of this new method of treating it."

CASE II. By Dr DOBSON.

"On the 13th of February 1775, I was called to the only son of Mr C. a gentleman of this place: the child was between three and four years of age; had been indisposed about eight days; and had frequently complained of pain in his head and weariness, and pains in his limbs: had been sick by fits, and sometimes vomited; was feverish, and could not bear the light.

"I was much alarmed on hearing this account, as the *hydrocephalus internus* had already proved fatal to three children of this family, who had all been under my care. And that this had been the disease was evident, both from the symptoms and the appearances on dissection. But my alarm was much farther increased on examining the little patient. The pulse I found very frequent and irregular. The head hot, the cheeks flushed, the pupils dilated, and a great degree of strabismus. There remained no doubt with respect to the nature of the disease.

"An emetic, some calomel powders, and a purgative, had been administered, without affording any relief. I directed the pediluvium, and emetic tartar, to be given in such doses as to excite nausea.

"February 14th. The symptoms the same, with frequent startings, disturbed sleep, and tossing from side to side on the pillow. A blister was applied between the shoulders, the pediluvium repeated, and the emetic tartar continued.

"15th. Comatose, restless, and shrieking by fits. The pulse slower than in health, and the eyes insensible even to the impressions of strong light.

"As I had no hope of doing any thing effectual for the recovery of my patient, I paid my visits, prescribed, and gave directions with a foreboding and heavy heart. Anxiously, however, considering the case

in different points of view, and fully convinced that it was vain to pursue the usual line of practice, it occurred to me, that mercurials, so far urged as to enter the course of circulation, and affect the salivary glands, might possibly reach the system of absorbents in the ventricles of the brain, and thus remove the extravasated fluid.

"The short continuance of the disease, and the apparent strength of my patient, were favourable to the trial of this method. No time, however, was to be lost. The parents were consulted, and readily gave their sanction to the proposal; for they were convinced, that, unless some powerful steps were taken, this their only son must be numbered with those of their children who had already fallen a sacrifice to the disease.

"The mercurial course, therefore, was commenced, and urged on with caution and expedition. In 48 hours the breath began to be offensive; the gums were reddish and swelled; and the symptoms of the disease, so far as could be distinguished, were somewhat abated. In 48 hours more the ptyalism came on, and the disease was evidently declining. Between the 15th and 22d he took 20 grains of calomel, and one drachm of the strongest mercurial ointment was likewise rubbed in well upon the legs and thighs. The dose of calomel was one grain, mixed with a little sugar, and repeated at such intervals as the circumstances of the case pointed out.

"After the 22d no more mercurials were administered; a moderate ptyalism continued for five or six days, then gradually ceased, and the disease was entirely removed. The bark was then given, as the best tonic remedy after the mercurial course, and as the best preservative against a relapse. The strabismus, I observed, was the last symptom which disappeared.

"From the 15th, no other medicines were used except mercurials. The three sisters of the above patient, who all died of this disease, were treated with blisters; and to one of them they were applied in succession to the head, behind the ears, and between the shoulders."

CASE III. By Dr PERCIVAL.

"One of my own children, a girl, aged three years and three months, has lately been a severe sufferer under this alarming malady. As soon as the characteristic symptoms of the disease clearly manifested themselves, I laid aside all other remedies, convinced, by repeated observation, of their insufficiency; and trusted solely, though with much solicitude, to the internal and external use of mercury. In 48 hours, signs of amendment appeared, and her recovery was perfected in six days. During this space of time, thirteen grains of calomel were administered, and seven scruples of *unguentum mercuriale fortius* carefully rubbed into her legs."

CASE IV. By Mr JOHN MACKIE Surgeon in Huntington.

JOHN ALGOOD, aged 27, of a thin habit of body, accustomed for four or five years past to work in a tan-yard in a very stooping posture, was attacked in the beginning of May with an irregular intermitting fever, accompanied with much pain in his joints.

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These complaints continued till about the middle of June, when he was seized with a violent and constant pain in the back-part of his head, attended with great giddiness, noise in his head and ears, dimness of sight, &c. and his fever became more continued. He lay in this state upwards of a month, without receiving any benefit from some medicines which he took during this period.

Mr Mackie was called to him in the middle of July, and found him labouring under the following symptoms: A fixed pain on the right side and back part of his head, which was frequently so acute as to make him quite outrageous, crying out, tearing his hair, beating himself on the head, &c. He had such a giddiness, that, unless strongly held, he could not support himself a moment in an upright posture. He could not bear the light; and, when he did venture to open his eyes, could not see objects distinctly. His pupils were uncommonly dilated; and his right eye seemed drawn outward, and rather contracted in its volume. He complained of a strange palpitating noise in his head and ears; and said, he felt at times as if there was a weight of water falling from one side of his head to the other. He was, in general, sensible; but, on asking him two or three questions together, he became confused, and, like a person with an oppressed brain, answered with hesitation, quite wide of the question, and often opposite to what he meant. Along with these, he had a hot skin, small quick pulse, thirst, a foul tongue, urine in small quantity and high-coloured; he was emaciated, sick, costive, and sweated much; had often a kind of stupor, but very little sleep. Once in the 24 hours he had generally a remission (of three or four hours continuance) of the febrile symptoms, but of none of the other complaints.

July 16th. Ordered three or four leeches to be applied to each temple immediately; an emetic to be taken in the evening, and a cooling purge to-morrow morning.

17th. In the evening found the leeches had taken away a good deal of blood, and the vomit and purge operated well. No change in the complaints, except that the sickness is a little abated. He screamed greatly on attempting to raise his head from the pillow.

Ordered his head to be shaved, and a sharp blister to be applied all over the occiput, large enough to cover the nape of the neck; also one on the inside of the leg. Internally,—R. *Nitri puri*, dr. ss. *Gamphoræ*, gr. iv. *M. f. pulvis*; *quarta quaque hora sumendus durante febrili calore*. R. *Pulv. cort. Peruvian.* dr. i. *Pulv. rad. valerian. sylv.* dr. ss. *M. f. pulvis, exhibendus quamprimum remissio appareat, & repetendus si ultra horas tres pergat.* Thin milk-gruel and barley-water for drink.

July 19th. The blisters have discharged much, and he has taken the medicines punctually; but the fever and other complaints remain as before. Pulse very irregular; pain in the head and restlessness extreme.

I left off the camphor; and in its stead added to each nitrous powder, tartar emetic, gr. $\frac{1}{4}$. Dressed the blisters with the *unguent. ad vesicatoria*.

21st. Two doses of the bark and valerian were given during the two last remissions of the fever, which were full four hours each; but to day there appears no kind of amendment. All the symptoms continue

much the same. Shrieked out much, and talked incoherently. Has had no stool since he took his physic. Ordered a laxative glyster to be thrown up directly, and the medicines to be continued as on the 19th.

23d. The glyster procured two motions. Has sweated profusely through the last 48 hours. Blisters have run freely. The two last diurnal remissions not quite so distinct. No abatement of the other complaints. The pain, giddiness, stupor, contortion of the eyes, &c. remain in as great a degree as ever.

Mr Mackie now left off all other medicines, and ordered ten grains of calomel, made into a bolus with conserve of roses, to be taken at bed-time; at the same time, a dram of the strong mercurial ointment was directed to be rubbed into the ankles; and both to be repeated every night.

25th. Found no alteration. Fever and other symptoms the same. Blisters heal, having been dressed these two days with basilicon. The calomel, and mercurial friction, ordered to be continued as on the 23d.

26th. Mr Mackie found him complaining much of being griped. Had two purging stools in the last 24 hours. His gums were a little tender, and his breath beginning to be tainted. In other respects as usual. Left off the calomel, and ordered a double quantity of the mercurial ointment to be rubbed into his thighs every night.

28th. He had had a calmer night than any for these two months past. For the first time, he said the pain of his head was abated; he looked more composed; his skin felt cooler; his pulse more full, and not so quick. He complained of his mouth being sore, and his tongue swelled; and had discharged a good deal of saliva in the night. Only one dram of the ointment to be rubbed in, for the two next nights.

30th. He spit about three quarts during the last 48 hours, and complains of much heat in his mouth; but all his other complaints better. Pain in his head almost gone, excepting now and then a shoot. Giddiness much abated. He said he often felt a trickling kind of motion, as of water running along the inside of his temples; but this sensation was without pain. He could sit up in bed, and feed himself; was sensible, and in spirits. Pulse regular, and not above 70 in a minute. He has had a remission of upwards of six hours to-day; ordered the ointment to be left off.

Aug. 1st. Continues to spit freely. Had yesterday a smart return of the fever; which, however, only held him about 12 hours. To-day there is a perfect remission, and he is in every respect much mended.—Has had some hours good sleep. Complains very little of pain. Got out of bed for the first time; sat up three hours; and could even bear the light without being disturbed by it. Complained of being hungry. Allowed plenty of milk-porridge and small broth.

3d. The spitting keeps up to about a quart in the 24 hours. Found him out of bed to-day, and almost without complaints. He said his head was well; and that he only wanted strength, and to get rid of his fever and sore mouth. The remissions were now almost as long as the paroxysms, being about 12 hours each. Has taken no medicine internally since he left off the calomel,

Apoplexia.

Comata calomel, and was coſſive. Ordered a doſe of rhubarb; and after its operation a dram of the bark every four hours during the remiſſions.

6th. The ſpitting begins to decline. He has had no fever for the laſt 24 hours. He ſleeps well; and has an appetite, if the foreneſs of his mouth would let him eat. Headach and giddineſs gone; but his pupils ſtill continue much dilated. Ordered him another rhubarb-purge, and the bark to be continued every fix hours.

9th. Has had no fever, or other complaints. Spitting inconfiderable; mouth better; aſpect more natural; is able to walk about, and mends daily. Allowed him a more generous and ſubſtantial diet, and continued the bark twice a-day for another week.

From this time, he continued to get ſtrength apace; had good nights, good appetite, a perfect freedom from headach and fever; and, on the 23d, went to work, being in every reſpect quite well, and has continued ſo ever ſince.

This patient did not ſeem to receive the ſmalleſt benefit from the bliſters, or any thing elſe, till he took the mercury, which acted like a ſpecific; and the fever ſeemed to be altogether ſymptomatic, as it eaſily yielded after the other complaints were removed.

Although it muſt be allowed, that the affection here deſcribed was in many reſpects an anomalous one, yet many of the circumſtances render it in ſome degree probable that it depended on water in the head; and there are ſtrong reaſons for inferring that the mercury pushed ſo far as to excite ſalivation, was the means by which the cure was accompliſhed.

It is not wonderful that the publication of theſe caſes ſhould have led to the frequent employment of mercury in hydrocephalic affections. We are, however, ſorry to add, that extenſive employment of this remedy in ſuch caſes has by no means confirmed the favourable opinion which ſome were diſpoſed to entertain of it. It has been found, that in many caſes where mercury with hydrocephalic patients had been employed both internally and externally to a very great extent, no ſalivation was produced. Some, therefore, have even gone ſo far as to conclude, that ſalivation cannot be induced in this diſeaſe: and there is little reaſon to doubt, that, in the advanced periods of the diſeaſe, there occurs both an inſenſibility and diminished action of the abſorbents, by which alone mercury can be introduced into the ſyſtem; and likewiſe of the ſalivary organs, on which it muſt act before any obvious ſalivation can be induced. But, beſides that mercury is often given in this diſeaſe even to a great extent without producing any obvious effect, we muſt alſo mention with regret, that in not a few caſes of hydrocephalus, where mercury copiouſly exhibited at an early period produced ſalivation, the diſeaſe nevertheleſs has had a fatal termination; and it muſt be confeſſed, that an effectual remedy in this complaint ſtill remains to be diſcovered.

At the ſame time, beſides the caſes already mentioned, mercury has alſo ſucceeded in ſeveral others which had every appearance of hydrocephalus; and as we are yet unacquainted with any remedy, not even excepting bliſters, of which ſome are diſpoſed to think very favourably, on which more dependence is to be

put, the careful and regular employment of it ſhould not be neglected in any inſtance of this affection, unleſs ſome circumſtance occur ſtrongly contraindicating its uſe.

Sp. IV. APOPLEXY from *Atrabilis*.

259

Apoplexia atrabiliaris, *Sauv.* ſp. 12. *Preysinger.* ſp. 6.

This takes place in the laſt ſtage of the diffuſion of bile through the ſyſtem, i. e. of the black jaundice, and in ſome caſes the brain hath been found quite tinged brown. It cannot be thought to admit of any cure.

Sp. V. APOPLEXY from *External Violence*.

260

Apoplexia traumatica, *Sauv.* ſp. 2.
Carus traumaticus, *Sauv.* ſp. 5.

The treatment of this diſeaſe, as it ariſes from ſome external injury, properly falls under the article SURGERY.

Sp. VI. APOPLEXY from *Poisons*.

261

Apoplexia temulenta, *Sauv.* ſp. 3.
Carus a narcoticis, *Sauv.* ſp. 14.
Lethargus a narcoticis, *Sauv.* ſp. 3.
Carus a plumbagine, *Sauv.* ſp. 10.
Apoplexia mephitica, *Sauv.* ſp. 14.
Aſphyxia a mephitide, *Sauv.* ſp. 9.
Aſphyxia a muſto, *Sauv.* ſp. 3.
Cataleſis a fumo, *Sauv.* ſp. 3.
Aſphyxia a fumis, *Sauv.* ſp. 2.
Aſphyxia a carbone, *Sauv.* ſp. 16.
Aſphyxia foricariorum, *Sauv.* ſp. 11.
Aſphyxia ſideratorum, *Sauv.* ſp. 10.
Carus ab inſolatione, *Sauv.* ſp. 12.
Carus a frigore, *Sauv.* ſp. 15.
Lethargus a frigore, *Sauv.* ſp. 6.
Aſphyxia congelatorum, *Sauv.* ſp. 5.

THE poiſons which bring on an apoplexy when taken internally may be either of the ſtimulant or ſedative kind, as ſpirituſous liquors, opium, and the more virulent kinds of vegetable poiſons. The vapours of mercury, or of lead, in great quantity, will ſometimes produce a ſimilar effect; though commonly they produce rather a paralyſis, and operate ſlowly. The vapours of charcoal, or fixed air, in any form, breathed in great quantity, alſo produce an apoplexy, or a ſtate very ſimilar to it; and even cold itſelf produces a fatal ſleep, though without the apoplectic ſnorting.—To enumerate all the different ſymptoms which affect the unhappy perſons who have ſwallowed opium, or any of the ſtronger vegetable poiſons, is impoſſible, as they are ſcarce to be found the ſame in any two patients. The ſtate induced by them ſeems to differ ſomewhat from that of a true apoplexy; as it is commonly attended with convulſions, but has the particular diſtinguiſhing ſign of apoplexy, namely, a very difficult breathing or ſnorting, more or leſs violent according to the quantity of poiſonous matter ſwallowed.

Of the poiſonous effects of fixed air, Dr Percival gives the following account. “All theſe noxious vapours, whether ariſing from burning charcoal, the fermenting grape, the Grotti di Cani, or the cavern of Pyrmont, operate nearly in the ſame manner. When accumulated and confined, their effects are often inſtantaneous:”

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stantaneous: they immediately destroy the action of the brain and nerves, and in a moment arrest the vital motions. When more diffused, their effects are slower, but still evidently mark out a direct affection of the nervous system.

"Those who are exposed to the vapours of the fermenting grape, are as instantly destroyed as they would be by the strongest electrical shock. A state of insensibility is the immediate effect upon those animals which are thrust into the Grotti di Cani, or the cavern of Pyrmont: the animal is deprived of motion, lies as if dead; and if not quickly returned into the fresh air, is irrecoverable. And if we attend to the histories of those who have suffered from the vapours of burning charcoal, we shall in like manner find, that the brain and moving powers are the parts primarily affected.

"A cook who had been accustomed to make use of lighted charcoal more than his business required, and to stand with his head over these fires, complained for a year of very acute pain in the head; and after this, was seized with a paralytic affection of the lower limbs, and a slow fever.

"A person was left reading in bed with a pan of charcoal in a corner of the room. On being visited early the next morning, he was found with his eyes shut, his book open and laid on one side, his candle extinguished, and to appearance like one in a deep sleep. Stimulants and cupping-glasses gave no relief; but he was soon recovered by the free access of fresh air.

"Four prisoners, in order to make their escape, attempted to destroy the iron work of their windows, by the means of burning charcoal. As soon as they commenced their operations, the fumes of the charcoal being confined by the closeness of the prison, one of them was struck dead; another was found pale, speechless, and without motion; afterwards he spoke incoherently, was seized with a fever, and died. The other two were with great difficulty recovered.

"Two boys went to warm themselves in a stove heated with charcoal. In the morning they were found destitute of sense and motion, with countenances as composed as in a placid sleep. There were some remains of pulse; but they died in a short time.

"A fisherman deposited a large quantity of charcoal in a deep cellar. Some time afterwards, his son, a healthy strong man, went down into the cellar with a pan of burning charcoal and a light in his hand. He had scarcely descended to the bottom, when his candle went out. He returned, lighted his candle, and again descended. Soon after, he called aloud for assistance. His mother, brother, and a servant, hastened to give him relief; but none of them returned. Two others of the village shared the same fate. It was then determined to throw large quantities of water into the cellar; and after two or three days, they had access to the dead bodies.

"Cœlius Aurelianus says, that those who are injured by the fumes of charcoal become cataleptic. And Hoffman enumerates a train of symptoms which in no respect correspond with his idea of suffocation. Those who suffer from the fumes of burning charcoal, says he, have severe pains in the head, great debility, faintness, stupor, and lethargy.

"It appears from the above histories and observations, that these vapours exert their noxious effects on the brain and nerves. Sometimes they occasion sudden death; at other times, the various symptoms of a debilitated nervous system, according as the poison is more or less concentrated. The olfactory nerves are first and principally affected, and the brain and nervous system by sympathy or consent of parts. It is well known, that there is a strong and ready consent between the olfactory nerves and many other parts of the nervous system. The effluvia of flowers and perfumes, in delicate or irritable habits, produce a train of symptoms, which, though transient, are analogous to those which are produced by the vapours of charcoal; viz. vertigo, sickness, faintness, and sometimes a total insensibility. The female malefactor, whom Dr Mead inoculated by putting into the nostrils dosils of cotton impregnated with variolous matter, was, immediately on the introduction, afflicted with a most excruciating headach, and had a constant fever till after the eruption.

"The vapours of burning charcoal, and other poisonous effluvia, frequently produce their prejudicial, and even fatal effects, without being either offensive to the smell or oppressive to the lungs. It is a matter of importance, therefore, that the common opinion should be more agreeable to truth; for where suffocation is supposed to be the effect, there will be little apprehension of danger, so long as the breast keeps free from pain or oppression.

"It may be well to remember, that the poison itself is distinct from that gross matter which is offensive to the smell; and that this is frequently in its most active state when undistinguished by the sense. Were the following cautions generally attended to, they might in some instances be the happy means of preserving life. Never to be confined with burning charcoal in a small room, or where there is not a free draught of air by a chimney or some other way. Never to venture into any place in which air has been long pent up, or which from other circumstances ought to be suspected; unless such suspected place be either previously well ventilated, or put to the test of the lighted candle. For it is a singular and well-known fact, that the life of flame is in some circumstances sooner affected and more expeditiously extinguished by noxious vapours than animal-life. A proof of which I remember to have received from a very intelligent clergyman, who was present at a musical entertainment in the theatre at Oxford. The theatre was crowded; and during the entertainment, the candles were observed to burn dim, and some of them went out. The audience complained only of faintness and languor; but had the animal effluvia been still further accumulated or longer confined, they would have been extinguished as well as the candles.

"The most obvious, effectual, and expeditious means of relief to those who have unhappily suffered from this cause, are such as will dislodge and wash away the poison, restore the energy of the brain and nerves, and renew the vital motions. Let the patient therefore be immediately carried into the open air, and let the air be fanned backwards and forwards to assist its action; let cold water be thrown on the face; let the face, mouth, and nostrils, be repeatedly washed; and as soon

Comata as practicable, get the patient to drink some cold water. But if the case be too far gone to be thus relieved, let a healthy person breathe into the mouth of the patient; and gently force air into the mouth, throat, and nostrils. Frictions, cupping, bleeding, and blisters, are likewise indicated. And if, after the instant danger is removed, a fever be excited, the method of cure must be adapted to the nature and prevailing symptoms of the fever."

With regard to the poison of opium, Dr Mead recommends the following method of cure. Besides evacuations by vomiting, bleeding, and blistering, acid medicines and lixivial salts are proper. These contract the relaxed fibres, and by their diuretic force make a depletion of the vessels. Dr Mead says he hath given repeated doses of a mixture of salt of wormwood and juice of lemons, with extraordinary success. But nothing perhaps is of greater consequence, than to use proper means for the prevention of sleep, by rousing and stirring the patient, and by forcing him to walk about; for if he be once permitted to fall into a sound sleep, it will be found altogether impossible to awake him.

Of a kind somewhat akin to the poison of opium seems to be that of laurel-water, a simple water distilled from the leaves of the lauro-cerasus or common laurel. The bad effects of this were first observed in Ireland, where it had been customary to mix it with brandy for the sake of the flavour; and thus two women were suddenly killed by it. This gave occasion to some experiments upon dogs, in order to ascertain the malignant qualities of the water in question; and the event was as follows: All the dogs fell immediately into totterings and convulsions of the limbs, which were soon followed by a total paralysis, so that no motion could be excited even by pricking or cutting them. No inflammation was found upon dissection, in any of the internal membranes. The most remarkable thing was a great fulness and distension of the veins, in which the blood was so fluid, that even the lymph in its vessels was generally found tinged with red. The same effects were produced by the water injected into the intestines by way of clyster.

To make the experiment more fully, Dr Nicholls prepared some of this water so strong, that about a drachm of heavy essential oil remained at the bottom of three pints of it, which by frequent shaking was again quite incorporated with it. So virulent was this water, that two ounces of it killed a middle-sized dog in less than half a minute, even while it was passing down his throat. The poison appeared to reside entirely in the above-mentioned essential oil, which comes over by distillation, not only from the leaves of laurel, but from some other vegetables; for ten drops of a red oil distilled from bitter almonds, when mixed with half an ounce of water, and given to a dog, killed him in less than half an hour.

Volatile alkalies are found to be an antidote to this poison; of which Dr Mead gives the following instance. About an ounce of strong laurel-water was given to a small dog. He fell immediately into the most violent convulsions, which were soon followed by a total loss of his limbs. When he seemed to be expiring, a vial of good spirit of sal ammoniac was held to his nose, and a small quantity of the same

forced down his throat: he instantly felt its virtue; Apoplexia. and by continuing the use of it for some time, he by degrees recovered the motion of his legs; and in two hours walked about with tolerable strength, and was afterwards quite well.

With regard to the pernicious effects of cold, there is no other way of counteracting them but by the application of external heat. We are apt to imagine, that the swallowing considerable quantities of ardent spirits may be a means of making us resist the cold, and preventing the bad effects of it from arising to such an height as to destroy life; but these do not appear to be in the least possessed of any such virtue in those countries liable to great excesses of cold. The Peruvian bark, by strengthening the solids, as well as increasing the motion of the fluids, is found to answer better than any other thing as a preservative; but when the pernicious effects have already begun to discover themselves, nothing but increasing by some means or other the heat of the body can possibly be depended upon: and even this must be attempted with great care; for as, in such cases, there is generally a tendency to mortification in some of the extremities, the sudden application of heat will certainly increase this tendency to such a degree as to destroy the parts. But for the external treatment of such mortifications, see the article SURGERY.

Sp. VII. APOPLEXY from *Passions* of the *Mind*.

262

Carus a pathemate, *Sauv.* sp. 11.

Asphyxia a pathemate, *Sauv.* sp. 7.

Ecstasis catocche, *Sauv.* sp. 1.

Ecstasis resoluta, *Sauv.* sp. 2.

APOPLEXIES from violent passions may be either sanguineous or serous, though more commonly of the former than the latter species. The treatment is the same in either case. Or they may partake of the nature of catalepsy; in which case the method of treatment is the same with that of the genuine catalepsy.

Sp. VIII. The *Cataleptic* APOPLEXY.

263

Catalepsis, *Sauv.* gen. 176. *Lin.* 129. *Vog.* 230. *Sag.* gen. 281. *Boerb.* 1036. *Junck.* 44.

Dr CULLEN says he has never seen the catalepsy except when counterfeited; and is of opinion that many of those cases related by other authors have also been counterfeited. It is said to come on suddenly, being only preceded by some langour of body and mind; and to return by paroxysms. The patients are said to be for some minutes, sometimes (though rarely) for some hours, deprived of their senses, and all power of voluntary motions; but constantly retaining the position in which they were first seized, whether lying or sitting; and if the limbs be put into any other posture during the fit, they will keep the posture in which they are placed. When they recover from the paroxysm, they remember nothing of what passed during the time of it, but are like persons awaked out of sleep.—Concerning the cure of this disorder we find nothing that can be depended upon among medical writers.

Sp. IX. APOPLEXY from *Suffocation*.

264

Asphyxia suspenforum, *Sauv.* sp. 4.

Asphyxia immerforum, *Sauv.* sp. 1.

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THIS is the kind of apoplexy which takes place in those who are hanged or drowned. For the treatment of those persons, see the articles DROWNING and HANGING.

Besides the species above-mentioned, the apoplexy is a symptom in many other distempers, such as fevers both continued and intermitting, exanthemata, hysteria, epilepsy, gout, worms, ischuria, and scurvy.

265

GENUS XLIII. PARALYSIS.

The Palsy.

Paralysis, Boerb. 1057.

Hemiplegia, Sauv. gen. 170. Lin. 103. Vog. 220.

Paraplexia, Sauv. gen. 171.

Paraplegia, Lin. 102. Vog. 227.

Paralysis, Sauv. gen. 169. Lin. 104. Vog. 226.

Junc. 115.

Atonia, Lin. 120.

266

Sp. I. The Partial Palsy.

Paralysis, Sauv. gen. 169. Lin. 104. Vog. 226.

Junc. 115.

Paralysis plethorica, Sauv. sp. 1.

Paralysis serosa, Sauv. sp. 12.

Paralysis nervea, Sauv. sp. 11.

Mutitas a glossolysia, Sauv. sp. 1.

Aphonia paralytica, Sauv. sp. 8.

267

Sp. II. HEMIPLEGIA, or Palsy of one side of the Body.

Hemiplegia, Sauv. gen. 170. Lin. 108. Vog. 228.

Sag. gen. 276.

Hemiplegia ex apoplexia, Sauv. sp. 7.

Hemiplegia spasmodica, Sauv. sp. 2.

Hemiplegia serosa, Sauv. sp. 10.

268

Sp. III. PARAPLEGIA, or Palsy of one half of the Body taken transversely.

Paraplexia, Sauv. gen. 171. Sag. gen. 277.

Paraplegia, Lin. 102. Vog. 227.

Paraplexia sanguinea, Sauv. sp. 2.

Paraplexia a spina bifida, Sauv. sp. 3.

Paraplexia rheumatica, Sauv. sp. 1.

Description. The palsy under all the different forms here mentioned as particular species, shows itself by a sudden loss of tone and vital power in a certain part of the body. In the slighter degrees of the disease, it only affects a particular muscle, as the sphincter of the anus or bladder, thus occasioning an involuntary discharge of excrements or of urine; of the muscles of the tongue, which occasions stammering, or loss of speech; of the muscles of the larynx, by which the patient becomes unable to swallow solids, and sometimes even liquids also. In the higher degrees of the disease, the paralytic affection is diffused over a whole limb, as the foot, leg, hand, or arm; and sometimes it affects a whole side of the body, in which case it is called *hemiplegia*; and sometimes, which is the most violent case, it affects all the parts below the waste, or even below the head, though this last be exceedingly rare. In these violent cases, the speech is either very much impeded, or totally lost. Convulsions often take place in the sound side, with the cynic spasm or involuntary laughter, and other distortions of the face.

Nº 207.

Sometimes the whole paralytic part of the body becomes livid, or even mortifies before the patient's death; and sometimes the paralytic parts gradually decay and shrivel up, so as to become much less than before. Whether the disease be more or less extended, many different varieties may be observed in its form. Sometimes there occurs a total loss of sense while motion is entire; in others a total loss of motion with very slight or even no affection of sense; and in some cases, while a total loss of motion takes place in one side, a total loss of sense has been observed on the other. This depends entirely on the particular nerves or branches of nerves in which the affection is situated; loss of sense depending on an affection of the subcutaneous nerves; and loss of motion on an affection of these leading to the muscles.

Causes, &c. Palsies most commonly supervene upon the different species of coma, especially the apoplexy. They are also occasioned by any debilitating power applied to the body, especially by excesses in venery. Sometimes they are a kind of crisis to other distempers, as the colic of Poitou, and the apoplexy. The hemiplegia especially often follows the last mentioned disease. Aged people, and those who are by any other means debilitated, are subject to palsy; which will sometimes also affect even infants, from the repulsion of exanthemata of various kinds. Palsies are also the infallible consequences of injuries of the large nerves.

Prognosis. Except in the slighter cases of palsy, we have little room to hope for a cure; however, death does not immediately follow even the most severe paralytic affections. In an hemiplegia it is not uncommon to see the patients live several years; and even in the paraplegia, if death do not ensue within two or three weeks, it may not take place for a considerable time. It is a promising sign when the patient feels a slight degree of painful itchiness in the affected parts; and if a fever should arise, it bids fair to cure the palsy. When the sense of feeling remains, there is much more room to hope for a cure than where it is gone, as well as the power of motion. But when we observe the flesh to waste, and the skin to appear withered and dry, we may look upon the disease to be incurable. Convulsions supervening on a palsy are a fatal sign.

Cure. Many remedies have been recommended in palsies: but it must be confessed, that, except in the slighter cases, medicines seldom prove effectual; and before any scheme of cure can be laid down, every circumstance relative to the patient's habit of body and previous state of health should be carefully weighed. If an hemiplegia or paraplegia should come on after an apoplexy, attended with those circumstances which physicians have supposed to denote a viscid state of the blood, a course of the attenuant gums, with fixed alkaline salts, and chalybeate waters, may do service; to which it will be proper to add frictions with the volatile liniment all down the spine: but in habits where the blood is rather inclined to the watery state, it will be necessary to give emetics from time to time; to apply blisters, and cut issues.

The natural hot baths are often found useful in paralytic cases; and where the patients cannot avail themselves of these, an artificial bath may be tried by dissolving

Comata dissolving salt of steel in water, and impregnating the water with fixed air. Frictions of the parts, and scouring them with nettles, have also been recommended, and may do service, as well as volatile and stimulating medicines taken inwardly. And it is probably by operating in this manner, that the use of camphor, or a mercurial course continued for some length of time to such a degree as gently to affect the mouth, have been found productive of a cure in obstinate cases of this affection. Of late years, an infusion of the arnica montana or German leopard's bane, has been highly extolled in the cure of this disease by some foreign writers: but the trials made with it in Britain, particularly at Edinburgh, have been by no means equally successful with those related by Dr Collins, who has strongly recommended this medicine to the attention of the public.

269 Sp. IV. The Palsy from Poisons.

Paralysis metallariorum, *Sauv.* sp. 22.

Hemiplegia saturnina, *Sauv.* sp. 14.

This kind of palsy arises most frequently from lead taken into the body, and is a consequence of the colica pictonum, under which it is more particularly treated.

270 TREMOR, or TREMBLING.

Tremor, *Sauv.* gen. 129. *Lin.* 139. *Vog.* 184. *Sag.* 236.

This by Dr Cullen is reckoned to be always symptomatic either of palsy, asthma, or convulsions; and therefore need not be treated of by itself.

271 ORDER II. ADYNAMIÆ.

ADYNAMIÆ, *Vog.* Class VI.

Defectivi, *Lin.* Class VI. Order I.

Leipopsychiæ, *Sauv.* Class VI. Order IV. *Sag.* Class IX. Order IV.

272 GENUS XLIV. SYNCOPÆ.

FAINTING.

Syncope, *Sauv.* gen. 174. *Sag.* 94. *Vog.* 274. *Sag.* 280. *Funck.* 119.

Leipothymia, *Sauv.* gen. 173. *Lin.* 93. *Vog.* 273. *Sag.* 279.

Asphyxia, *Sauv.* gen. 175. *Lin.* 95. *Vog.* 275. *Sag.* 281.

Virium lapsus et animi deliquia. *Hoffm.* III. 267.

273 Sp. I. The Cardiac SYNCOPÆ.

Syncope plethorica, *Sauv.* sp. 5. *Senac.* Tr. de Cœur, p. 540.

Syncope a cardiogmo, *Sauv.* sp. 7. *Senac.* de Cœur, 414. *Morgagn.* de Sed. XXV. 2. 3. 10.

Syncope a polypo, *Sauv.* sp. 8. *Senac.* p. 471.

Syncope ab hydrocardia, *Sauv.* sp. 12. *Senac.* 533. *Schreiber Almag.* L. III. § 196.

Syncope *Lanzoni*, *Sauv.* sp. 18. *Lanzon.* Op. II. p. 462.

Asphyxia Valsalviana, *Sauv.* sp. 13.

274 Sp. II. Occasional SYNCOPÆ.

Leipothymia a pathemate, *Sauv.* sp. 1. *Senac.* p. 544. Vol. XI. Part I.

Syncope pathetica, *Sauv.* sp. 21.

Asphyxia a pathemate, *Sauv.* sp. 7.

Syncope ab antipathia, *Sauv.* sp. 9. *Senac.* p. 544.

Syncope a veneno, *Sauv.* sp. 10. *Senac.* p. 546.

Syncope ab apostematis, *Sauv.* sp. 11. *Senac.* p. 554.

Syncope a sphacelo, *Sauv.* sp. 14. *Senac.* p. 553.

Syncope ab inantione, *Sauv.* sp. 1. *Senac.* p. 536.

Syncope a phlebotomia, *Sauv.* sp. 4.

Syncope a dolore, *Sauv.* sp. 2. *Senac.* p. 583.

Asphyxia traumatica, *Sauv.* sp. 14.

Asphyxia neophytorum, *Sauv.* sp. 17.

Description. A syncope begins with a remarkable anxiety about the heart; after which follows a sudden extinction, as it were, not only of the animal powers and actions, but also of the vital powers, so that the patients are deprived of pulse, sense, and motion, all at once. In those cases which physicians have distinguished by the name of *leipothymia*, the patient does not entirely lose his senses, but turns cold and pale; and the pulse continues to beat, though weakly; the heart also seems to tremble rather than beat; and the respiration is just perceptible. But in the true syncope or full asphyxia, not the smallest sign of life can be perceived; the face hath a death-like paleness, the extremities are cold, the eyes shut, or at least troubled; the mouth sometimes shut, and sometimes gaping wide open; the limbs flaccid, and the strength quite gone; as soon as they begin to recover, they fetch deep and heavy sighs.

Causes, &c. Fainting is occasioned most commonly by profuse evacuations, especially of blood; but it may happen also from violent passions of the mind, from surfeits, excessive pain, &c. People of delicate constitutions are very subject to it from slight causes; and sometimes it will arise from affections of the heart and large vessels not easy to be understood. Fainting is also a symptom of many disorders, especially of that fatal one called a *polypus of the heart*, of the plague, and many putrid diseases.

Prognosis. When fainting happens in the beginning of any acute distemper, it is by no means a good omen; but when it takes place in the increase or at the height of the disease, the danger is somewhat less; but in general, when fainting comes on without any evident cause, it is to be dreaded. In violent hæmorrhagies it is favourable; as the bleeding vessels thus have time to contract and recover themselves, and thus the patient may escape.

Cure. When persons of a full habit faint through excess of passion, they ought to be blooded without delay, and should drink vinegar or lemon-juice diluted with water; and, after the bowels are emptied by a clyster, take a pægoric draught, and go to bed.

The passion of anger, in a peculiar manner, affects the biliary secretion, causes an oppression at the stomach, with nausea and retching to vomit, and a bitter taste in the mouth, with giddiness: these symptoms seem to indicate an emetic; which, however, in these cases must be carefully avoided, as it might endanger the patient, by bringing on an inflammation of the stomach.

The general effects of a sudden fright have been mentioned on a former occasion. When these are so violent as to require medical aid, our first endeavours

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Adynamia must be to take off the spasmodic constriction, and restore freedom to the circulation; by bleeding, if the habit be at all inclined to fulness; and by giving a mixture, with equal parts of the vinum antimoniale and tinctura opii camphorata, in some agreeable vehicle, which will bring on sleep and encourage perspiration. It was formerly mentioned, that convulsions, or even an epilepsy, may be brought on by frights; which should make people cautious of playing foolish tricks in this way.

When a surfeit, or any species of *faburra*, occasions a *leipothymia*, an emetic is the immediate remedy, as soon as the patient, by the help of acrid stimulants, shall be so far roused as to be able to swallow one: in these cases, tickling the fauces with a feather dipt in spirit of hartshorn, will be proper, not only to rouse the patient, but also to bring on vomiting.

A syncope is most commonly brought on by profuse discharges or evacuations, either of the blood or of the secreted humours.

In order to revive the patients, they ought to be laid along in a horizontal posture, in an airy place; the legs, thighs, and arms, are to be rubbed with hot flannels; very strong vinegar, or salt of hartshorn, or volatile alkaline spirit, are to be held to the nostrils, and rubbed into them; or, being properly diluted, poured down the throat; cold water is to be sprinkled on the face and neck; and when by these means the patient shall be sufficiently revived, wine boiled up with some grateful aromatic, is to be given in the proper quantity.

In the fainting consequent upon profuse uterine hæmorrhagies, it will be a safer practice to abstain from all heating and stimulant things; as life, in these cases, is preserved by the coagulation of the blood in the extremities of the open vessels; which might be prevented by the pouring in hot wine or volatile alkaline spirits.

When a syncope is the consequence of the too violent operation of either an emetic or cathartic, the tinctura thebaica, mixed with spiced wine, is the most efficacious remedy; but the opiate must be given gradually, and in very small doses.

A syncope, or even asphyxia, wherein the patient shall lie for several hours, is frequent in hysteric constitutions; and during the fit requires fetid antispasmodics, together with acrid stimulants: to prevent returns, nothing answers better than the Peruvian bark joined with chalybeates.

GENUS XLV. DYSPEPSIA.

Depraved Digestion.

Dyspepsia, *Vog.* 277.

Apepsia, *Vog.* 276.

Diaphora, *Vog.* 278.

Anorexia, *Sauv.* gen. 162. *Lin.* 116. *Sag.* gen. 286.

Cardialgia, *Sauv.* gen. 202. *Lin.* 48. *Vog.* 157. *Sag.* gen. 160.

Gastrodynia, *Sauv.* gen. 203. *Sag.* gen. 161.

Soda, *Lin.* 47. *Vog.* 161.

Nausea, *Sauv.* gen. 250. *Lin.* 182. *Vog.* 159. *Sag.* gen. 185.

Vomitus, *Sauv.* gen. 251. *Lin.* 183. *Vog.* 214. *Sag.* gen. 186.

Flatulentia, *Sauv.* gen. 272. *Lin.* 165. *Vog.* 127. *Dyspepsia*. *Sag.* gen. 207.

The idiopathic species are,

- Anorexia pituitosa*, *Sauv.* sp. 2.
- Anorexia a faburra*, *Sauv.* sp. 9.
- Anorexia exhaustorum*, *Sauv.* sp. 8.
- Anorexia paralytica*, *Sauv.* sp. 1.
- Nausea ex cacoehylia*, *Sauv.* sp. 11.
- Vomitus pituitosus*, *Sauv.* sp. 26.
- Vomitus ruminatio*, *Sauv.* sp. 6.
- Vomitus a faburra*, *Sauv.* sp. 2.
- Vomitus a crapula*, *Sauv.* sp. 1.
- Vomitus lacteus*, *Sauv.* sp. 3.
- Flatulentia infantilis*, *Sauv.* sp. 5.
- Flatulentia acida*, *Sauv.* sp. 1.
- Flatulentia nidrosa*, *Sauv.* sp. 2.
- Cardialgia bradypepta*, *Sauv.* sp. 9.
- Cardialgia a faburra*, *Sauv.* sp. 2.
- Cardialgia lactantium*, *Sauv.* sp. 11.
- Cardialgia flatulenta*, *Sauv.* sp. 3.
- Cardialgia paralytica*, *Sauv.* sp. 7.
- Gastrodynia faburralis*, *Sauv.* sp. 1.
- Gastrodynia flatulenta*, *Sauv.* sp. 2.
- Gastrodynia periodynia*, *Sauv.* sp. 7.
- Gastrodynia astringens*, *Sauv.* sp. 9.
- Gastrodynia atterens*, *Sauv.* sp. 10.
- Gastrodynia a frigore*, *Sauv.* sp. 18.

Besides these there are a great number of symptomatic species.

Description. It is by no means easy to define exactly the distemper called *dyspepsia*, when considered as an original disease, as there are very few maladies which some way or other do not show themselves by an affection of the stomach; and much more difficult still must it be to enumerate all its symptoms. The most remarkable, however, and the most common, are the following: Want of appetite; distension of the stomach when no food has been taken for some time before; slight dejection of spirits: a gradual decay of the muscular strength; languor, and aversion from motion; the food which is taken without appetite is not well digested; the stomach and intestines are much distended with flatus, whence the patients are tormented with spasms, gripes, and sickness: frequently a limpid water, having an acid or putrid taste, is brought up; sometimes the food itself is thrown up by mouthfuls; and sometimes, though rarely, the same is swallowed again, after the manner of ruminating animals. While matters are in this situation, the heart sometimes palpitates, and the breath is quick, and drawn with difficulty; the head aches and is giddy; and sometimes both these symptoms are continual, and very violent, insomuch that the patient is not only tormented with pain, but staggers as if he was drunk. From the too great acescency or putrefaction of the aliment, a *cardialgia* or heartburn comes on; and in this situation a spontaneous diarrhœa sometimes carries off the disease; but in other cases there is an obstinate costiveness, attended with colic-pains. Frequently the pulse is quick, sometimes slow, but always weak: the circulation is so languid, that the blood can scarce reach the extreme vessels, or at least stagnates

Adynamia stagnates in them, so that the face becomes livid, swelled, and has an unusual appearance: and at the same time that the circulation and nervous power are in this languid state, the perspiration becomes less copious; the skin becomes dry and corrugated; the natural heat, especially of the extremities, is much diminished; the tongue is white; and an universal laxity takes place, inasmuch that the uvula and velum pendulum palati are sometimes enlarged to such a degree as to become extremely troublesome. The patient is either deprived of rest, or wakes suddenly out of his sleep, and is disturbed by frightful dreams; at the same time that the mind seems to be affected as well as the body, and he becomes peevish, fretful, and incapable of paying attention to any thing as usual. At last hectic symptoms come on, and the whole frame becomes so irritable, that the slightest cause excites an universal tremor, and sometimes violent vomiting and diarrhoea. Sometimes the salivary glands are so relaxed, that a salivation comes on as if excited by mercury; the serum is poured out into the cavity of the abdomen and cellular substance of the whole body, and the patient becomes affected with anasarca or ascites.

Causes, &c. The causes of dyspepsia may be any thing which debilitates the system in general, but in a particular manner affects the stomach. Such are opium taken in immoderate quantities, which hurts by its sedative and relaxing powers; spirituous liquors drunk to excess; tobacco, tea, coffee, or any warm relaxing liquor, taken in too great quantity; acid, unripe fruits; vomits or purges too frequently taken; an indolent sedentary life, &c. &c. All these act chiefly upon people of a weak and delicate habit; for the robust and hardy seldom labour under a dyspepsia, or at most a very slight one.

Prognosis. When a dyspepsia first occurs, it is frequently removed without great difficulty; when it is symptomatic, we must endeavour to cure the primary disease; and without this we cannot expect a complete removal of the affection: but when it frequently returns with symptoms of great debility, hectic fever, or dropy, we have great reason to dread the event.

Cure. A radical cure of dyspepsia is only to be expected by removing from the stomach and system that debility on which the disease depends. On this ground, the objects chiefly to be aimed at in the cure are, 1st, The avoiding whatever will tend to diminish the vigour of the stomach; 2d, The employing such remedies as have influence in encreasing that vigour; and, in the third place, The obviating urgent symptoms, particularly those which tend to increase and support the affection. Of the avoiding causes, which tend to diminish the vigour of the stomach, after what has already been said of the causes inducing the disease, it is unnecessary to make any farther observations; and indeed every dyspeptic patient will be taught by experience what is to be done with this intention. The medicines chiefly employed with the view of increasing vigour are those of the tonic kind: but, previous to their use, it will be necessary to evacuate the contents of the alimentary canal by vomits or purgatives. If there be a tendency to putrescency, antiseptics must then be exhibited; but

more frequently there is a prevailing acidity, which creates an intolerable heart-burn. To palliate this symptom, magnesia alba may be given; which is much preferable to the common testaceous powders, as being purgative while dissolved in an acid, when the others are rather astringent. In the third volume of the Medical Observations, we have an account of two cases of dyspepsia attended with a very uncommon degree of cardialgia, in which magnesia was so successful, that we can scarce doubt of its efficacy in slighter degrees of the disorder. They were communicated by Dr Watson.

“A woman, aged 34, the mother of several children, was taken, in the fourth month of her pregnancy, with violent vomitings; which growing daily worse, notwithstanding the endeavours of her apothecary to restrain them, brought on at the end of a month such severe pains in the stomach, and spasms in her abdomen, as to occasion abortion. The vomitings were not lessened by this event, but grew worse, and frequently brought on general convulsions to such a degree, that she was many times supposed to be at the point of death.

“Scarce any medicine staid with her; she brought up almost instantly whatever was given her as nourishment, either in a solid or liquid form. She was exceedingly pale, and very much emaciated; her flesh was cold to the touch; and, though her urine was little in quantity, it was perfectly limpid. She had a continual thirst, and was, in a considerable degree, costive. Her pulse was low and quick, and she was frequently tormented with the hiccough. The pain in her stomach was severe and constant; and whatever she brought up was sharp to such a degree as to make her mouth and throat very sore. These parts upon examination appeared high-coloured, and in many places excoriated; and the pain she felt in her stomach upon swallowing any liquor that had the least degree of acrimony, or was more than luke-warm, made it probable the stomach itself, in its internal surface, was affected in the same manner.

“In this wretched state I was consulted; and must confess that I was much at a loss how to relieve a patient so debilitated, and whose stomach was in so diseased a state, that it seemed incapable of retaining any appropriated remedies long enough to correct the acrimony of the juices, and restore the secretions to a more mild and natural state. Anti-emetics of various kinds had been tried without effect, particularly saturated solutions of alkaline salt in juice of lemons. Stomachic medicines of the warm and aromatic kind she could not bear, on account of their poignancy; and, though nothing could so speedily correct the almost caustic acid of the gastric juice as solutions of alkaline salts, neither the fauces nor gullet could bear their acrimony.

“My expectations of relieving this patient, small as they were, depended upon my being able to neutralize, and thereby lessen, the stimulus of the acid of the stomach. To accomplish this was not very easy, as no medicine in small doses could in any considerable degree correct so intense an acid; and, in the present situation, it was difficult to get any medicine to stay long enough to exert its effects. To discharge however what acrid matter might be already accumulated

Adynamia

in the stomach, I directed that the patient should drink plentifully of small, warm, unsalted mutton-broth, and vomit with it so long that it should be discharged with no other taste than that of broth. This was complied with, and a large quantity drank. The pain in her stomach ceased upon this for more than two hours, and was after that time apparently coming on with the same violence as before. Upon which I ordered a drachm of magnesia to be given in two ounces of veal-broth. This kept down, and eased her; I therefore directed the same dose to be repeated as often as the pain returned, without any regard to the quantity that the whole might amount to, supposing that the pain continued severe. This was done; and in three days she took three ounces of magnesia, of which very few doses were vomited up, and she was purged considerably.

"This medicine was continued in a somewhat less quantity for three days longer, in which she took two ounces more of magnesia; by this time the vomitings ceased, the convulsions left her, she had no pains in the stomach, and her mouth and fauces lost their intensely red colour and soreness; nor did even her eructations longer indicate any acidity.

"Besides veal-broth she was allowed boiled rice, and now and then some rice gruel with a small quantity of brandy; and after a few days more she could retain boiled chicken, and other light, solid, animal-food.

"When her stomach was in this state, she took liberally of *decoct. cort. Peruvian.* with a small portion of French brandy; by which and her nourishment she recovered her strength surprisingly. To this medicine, as she was during the latter part of her illness considerably anasarctous, were added some preparations of steel; and in about a month she perfectly recovered.

"When this patient's stomach was relieved, the thirst, the general and partial spasms, and other complaints, which were merely symptomatic, soon ceased; and what remained of her cure was by no means difficult.

"Since the above-recited case, I was consulted in another almost in every respect similar, except that the former began in pregnancy. The vomitings attended with acidity had continued more than a month; the patient's stomach rejected every kind of food and medicine; she was debilitated to a great degree, and universally anasarctous.

"Upon being sent for, I directed for her magnesia, much in the same manner as for the former patient; and in a very few days her vomitings ceased, her stomach became stronger, and in less than a fortnight the anasarca disappeared. But it was a considerable time, as this person was more advanced in years than the former, before she recovered her strength, notwithstanding my best endeavours for that purpose. She at length, however, perfectly recovered."

But although acidity may often be successfully obviated in this manner, yet the best way of counteracting this symptom, as well as of obviating costiveness, flatulence, and a variety of others, is by restoring the tone of the stomach in particular, and indeed

of the system in general. With this intention, recourse is had to a variety of tonics both from the mineral and vegetable kingdom; particularly chalybeates in different forms, gentian, colombo, and the like; but of all the tonics which can be employed in this affection, none are attended with greater benefit than exercise and cold bathing; and the proper and prudent employment of these is no less effectual in removing the disease, than in preventing the return of it after it is once removed.

GENUS XLVI. HYPOCHONDRIASIS.

HYPOCHONDRIAC AFFECTION.

276

Hypochondriasis, *Sauv. gen.* 220. *Lin.* 76. *Vog.* 218. *Sag.* 332.

Morbus hypochondriacus, *Boerb.* 1098.

Malum hypochondriacum, *Hoffm.* III. 65. *Junck* 36.

Although some of the nosological writers, particularly Sauvages, have considered this genus as consisting of different species, Dr Cullen is of opinion, that there is only one idiopathic species, the *hypochondriasis melancholica*. He considers not only the hypochondriasis hysterica, phthifica, and asthmatica, but also the biliosa, sanguinea, and pituitosa, as being only symptomatic; but he views the true melancholic hypochondriasis as being a proper idiopathic disease, perfectly distinct from hysteria, with which it has often been confounded.

Description. The symptoms of hypochondriasis are, stretching, pressing, griping, and tormenting pains, under the ribs, and chiefly in the left side; which sometimes are exasperated, and become pungent, burning, or lancinating. Frequently there is an inflation of the left hypochondriacum, which sometimes becomes stationary, and by Hippocrates was taken for a symptom of an enlarged spleen. When these symptoms take place in the right hypochondrium, they are commonly attended with colic-pains, uncertain flying heats, especially in the head, with a transient redness of the face, and very frequently an œdematous swelling of the feet succeeds. To these are superadded almost all the affections of the stomach occurring in dyspepsia, besides a variety of other symptoms, such as palpitations, sleepless nights, and the like. But besides these, there occurs also a particular depression of spirit and apprehension of danger, which may be considered as one of the great characterising symptoms of the disease.

Causes, &c. The general causes of the hypochondriac affection are said to be a plethora, and preternatural thickness of the blood; suppressions of customary evacuations; high and full diet, together with a sparing quantity of drink; an hereditary disposition; indolence; atony of the intestines; violent passions of the mind, &c.

Prognosis. The hypochondriac affection, when left to itself, is more troublesome than dangerous; but, if improperly treated, it may bring on various diseases of a more fatal tendency, such as the melancholy, bloody urine and nephritis, jaundice, vertigo, palsy, apoplexy, &c.

Cure. This is to be attempted by such medicines as counteract occasional causes, and obviate urgent symptoms.

Adynamia symptoms, which may be all comprehended under bleeding, gentle evacuants, chalybeates, the Peruvian bark, and exercise, especially riding on horseback, which in this disease is greatly preferable to any other. When the circumstances of the patient can afford it, a voyage to Spain, Portugal, or some of the warmer countries in Europe, will be of great service.

277

GENUS XLVII. CHLOROSIS.

GREEN SICKNESS.

Chlorosis, *Sauv.* gen. 309. *Lin.* 222. *Vog.* 305. *Sag.* gen. 135. *Boerb.* 1285. *Hoffm.* iii. 311. *Junck.* 86.

Of this genus also Dr Cullen thinks there is but one idiopathic species: viz. what some distinguish by the title of *chlorosis virginea*, others of *chlorosis amatoria*.

Description. This disease usually attacks girls a little after the time of puberty, and first shows itself by symptoms of dyspepsia. But a distinguishing symptom is, that the appetite is entirely vitiated, and the patient will eat lime, chalk, ashes, salt, &c. very greedily; while at the same time there is not only a total inappetence to proper food, but it will even excite nausea and vomiting. In the beginning of the disease, the urine is pale, and afterwards turbid; the face becomes pale, and then assumes a greenish colour; sometimes it becomes livid or yellow: the eyes are sunk, and have a livid circle round them; the lips lose their fine red colour; the pulse is quick, weak, and low, though the heat is little short of a fever, but the veins are scarcely filled; the feet are frequently cold, swell at night, and the whole body seems covered with a soft swelling; the breathing is difficult: nor is the mind free from affection as well as the body; it becomes irritated by the slightest causes; and sometimes the patients love solitude, become sad and thoughtful. There is a retention of the menses throughout the whole course of the disorder; and at last all the bad symptoms increasing, a leucophlegmasia, anasarca, atrophy, and death, succeed.

Causes. The cause of chlorosis is thought to be an atony of the muscular fibres of the alimentary canal, especially of the stomach, joined with a similar atony of the perspiratory vessels over the whole surface of the body, and the whole depending on an atony of those small arteries which pour out the menstrual blood. This atony may be occasioned by the same causes which bring on dyspepsia and hypochondriasis, but very frequently arises from love and other passions of the mind.

Prognosis. The chlorosis in all cases is tedious, though it does not generally prove fatal; but we can never promise a certain cure unless the menses make their appearance.

Cure. The remedies here in general are the same as in the dyspepsia and hypochondriasis; only in the chlorosis stronger purgatives may be made use of: those which stimulate the rectum are useful by stimulating also the vessels of the uterus; and for this reason indulgence in venery has sometimes been said to produce a cure, particularly with love-sick maids. The cold bath is also extremely proper.

ORDER III. SPASMI.

Tetanus.
278

SPASMI, *Sauv.* Class IV. *Vog.* Class V. *Sag.* Class VIII.
Motorii, *Lin.* Class VII.
Morbi spasmodici et convulsivi, *Hoffm.* III. 9.
Spasmi et convulsiones, *Junck.* 45, 54.
Epilepsia, *Boerb.* 1071, 1088.

GENUS XLVIII. The TETANUS.

279

Tetanus, *Sauv.* gen. 122. *Lin.* 127. *Vog.* 180. *Sag.* gen. 228.
Catochus, *Sauv.* gen. 123. *Lin.* 128. *Vog.* 183. *Sag.* gen. 229.
Opisthotonos, *Vog.* 181.
Episthotonos, *Vog.* 182.

On this distemper Dr Lionel Chalmers has published a dissertation in the first volume of the Medical Observations, which being superior to any thing that has appeared in other medical writers on the subject, we shall here lay before the reader.

“Of all the diseases to which man is subject, none deserves more to be considered than the opisthotonos and tetanus, either with regard to the variety of painful symptoms which almost without intermission distract the sick, or the danger of the diseases themselves, from which few recover, in comparison of the number they attack. In both, the vital actions are very imperfectly performed, most of those which are called *natural* being as it were suspended at once; and so far is the patient from being able to execute any voluntary motion, that the whole machine undergoes the most excruciating distortions, from the violent and unnatural contractions of the muscles. Happy it is for the inhabitants of the more temperate climates, that such diseases appear rarely among them; but in those countries which lie in the more southern and warmer latitudes, they are endemic, especially to negro slaves. In South Carolina, they show themselves at all seasons, but not so often in winter, more frequently in spring and autumn; and are most common in the summer, when people work abroad and are alternately exposed to the scorching heat of the sun and heavy showers, which often happen suddenly, and greatly alter the temperature of the air. Others are seized with the opisthotonos after sleeping without doors, that they may enjoy the deceitful refreshment of the cool night-air, when the weather is warm: one youth chose to cut off his hair and shave his head on a warm day in March, and went to bed without a cap; but the weather changed, and became cold in the night, and he was found rigid with that disease next morning.

“These diseases so rarely appear as originals in Europe, that a good history of them cannot be expected from the physicians who practise in that part of the world; nor has any thing like a full description been given of them by any ancient or modern author which I have seen. Hippocrates indeed takes notice of them in many places, and seems to regard them only as consequences of other diseases, or of wounds or ulcers of the nervous or tendinous parts, of which symptomatic kind of opisthotonos he gives three remarkable cases in *lib. V. § VII. de Morb. vulg.* and

Spasmi

repeats them in another place; but the few symptoms he recounts do not show themselves with us. Galen, Cœlius Aurelianus, Aretæus, &c. seem only to have copied Hippocrates, with the addition of some supposititious symptoms, which really do not appear; and the little that Bontius says of it is very faulty.

“ Among the numerous class of spasmodic diseases, there are three which distinguish themselves in a very particular manner, on which the names of *emprosthotonos*, *opisthotonos*, and *tetanus*, have been justly enough bestowed, as being expressive of the posture into which they throw and confine the patient. When therefore those muscles which bend the head, neck, and body forwards, suffer such involuntary, violent, and continued contractions, as to fix the chin to the breast, incurvate the spine and body, and retain the sick in this painful and prone posture, the disease is called *emprosthotonos*. When the posterior muscles are similarly affected, so that the head is drawn towards the spine, and the spine itself is recurvated, it has then the name of *opisthotonos*; although in fact, in this, all those muscles which act in deglutition, bend the head forwards, or turn it to either side, are equally contracted with those which raise the head and spine. The *tetanus* differs from, or rather is compounded of, both the others; for in this the patient is found rigid and inflexible, being as it were braced between the opposite contractions of the anterior and posterior muscles; yet even here the head is much retracted.

“ I never saw the *emprosthotonos*; and shall only speak of the *opisthotonos* and *tetanus*, the first being by far the most common, and in the last stage of which the tetanus frequently supervenes. And let it be observed, that the following description by no means respects such symptomatic contractions as often happen immediately before death, both in acute and chronic diseases; neither will it agree with that spurious *opisthotonos* or *tetanus* which appear sometimes in the first and second stages of quotidian intermittents in this country, however they may emulate the true diseases in some of their symptoms.

“ STAD. I. The *opisthotonos*, contrary to what Bontius asserts, often comes on gradually and by slight approaches, the patient complaining rather of an uneasy stiffness in the back-part of the neck and about the shoulders, than of any acute pain, with some degree of a general lassitude. These increase, and become so troublesome when he attempts to turn his head, or to bend it forward, as to oblige him to walk very erect; for he can by no means look downward, nor to either side, without turning his whole body. He cannot open his jaws without pain; and has some difficulty in swallowing, which discourages him from attempting to eat. At times he feels a sudden and painful traction under the *cartilago ensiformis*, which strikes thro’ to the back, and instantly increases the rigidity about the neck and shoulders, draws the head backward a little, and shuts the jaws closer. The pain under the *sternum* returns more frequently and with greater violence; and the other contractions become so strong, that the head from this time continues much retracted, and he now refuses nourishment, as swallowing is attended with great pain, and occasions a return of the spasm; which extends along the spine quite to the

lower extremities, so that they will no longer support him, and he is under the necessity of going to bed.

“ In this manner passes over the first stage of the *opisthotonos*, which sometimes takes up three or four days; the patient, as well as those about him, mistaking the first appearances of it for that rheumatic complaint, which is commonly called a *crick in the neck*; but it sometimes forms itself much quicker, and invades the unfortunate person with the whole train of its mischievous symptoms in a few hours: in which case, the danger may truly be estimated from the violence of the first attack; for such generally die in 24, 36, or 48 hours, and very rarely survive the third day. But when it is less acute, few are lost after the ninth or eleventh; which number of days it would not be possible for them to complete, unless the violence of the disease was in a good measure subdued; although I had one who recovered, after having been subject to its tyrannical attacks daily for six weeks. In this stage the pulse is slow, and very hard, and the belly is bound; blood taken away seems not to be altered from the natural state, so that no indication can be deduced therefrom, and it only varies with regard to laxity or compaction, according to the age of the person and season of the year.

“ STAD. II. The spasm under the sternum (which is the pathognomic symptom of this disease) becomes more violent, returning every 10 or 15 minutes; and never fails to be instantly succeeded by a stronger retraction of the head, with great rigidity and pain all round the neck, and along the spine to the lower extremities which are suddenly put to the stretch. The countenance is very pale and contracted; the jaws are that moment snapped together, and cannot afterwards be opened so wide as to receive the end of one’s little finger; an attempt to do which, by way of experiment, surely hurries on the spasm. The mastoid, coracohyoid and sternohyoid muscles, as well as all the others concerned in deglutition, and the deltoid and pectorals, are most violently contracted, so that the shoulders are strongly raised forward, and the arms are stretched out or drawn across the body; but the wrists and fingers seem not to be affected.

“ Such is the condition of the patient in the time of the spasm, which ceases in a few seconds: after which the shoulders and arms recline, and the inferior extremities relax; yet not so entirely, but that such a degree of rigidity for the most part remains as will not permit them to bend when this is attempted by another person; for as to the sick himself, he cannot at all move them. The muscles on the sides and forepart of the neck continue still contracted, although not so strongly; but their action is overcome by the number and strength of the posterior ones; so that the retraction of the head constantly remains. He breathes quick for some minutes, as if he had been excessively exercised; and the pulse is small, fluttering, and irregular, but both become more calm and slow. The face is sometimes pale in the intervals, but oftener flushed; and the whole countenance expresses strong appearances of the most melancholy distress, as well because of the dread he has of a return of the spasm, which he is sure will soon happen, as from the pain he suffers by the present contractions, and the more general

Tetanus.

Spasmi general and severe ones which he has so lately sustained. The tongue is stiff and torpid; but so far as it can be seen, is not foul. The belly is always bound, and cannot easily be loosened. In drinking, the liquid passes with great difficulty to the stomach, even in the smallest quantity; and if the spasm should seize him at that time, which an attempt to swallow for the most part occasions, the liquor returns through the nose with some force. The patients desire to lie still as much as possible; and avoid drinking, speaking, or being moved, either of which are apt to occasion a return of the spasm.

“**STAD. III.** In this last stage, the patient is reduced to the most calamitous and distressful circumstances: for he is on a continual rack, according to the most literal meaning of that word; the spasm returning oftener than once in a minute, is much more violent, and holds him longer, so that he has scarcely any remission. The anterior muscles of the whole body now suffer equal contractions with the posterior; but the last overcome the force of the others, so that the spine is strongly recurvated, and forms a hollow arch with the bed, and he rests on the back part of the head and the heels. The belly is flat, and is drawn inward; and the muscles are so rigidly contracted, that they will not give way to pressure, and do not seem in the least to yield to the descent of the diaphragm in inspiration; the several muscles about the neck, sides, and abdomen, being plainly distinguishable from each other. Although the lower extremities are always rigid in this state, yet are they so suddenly and violently distended in the time of the spasms, that were it not for the standers-by, he would be projected feet foremost off the bed; while others again are as it were pushed upward with such a spring, that the head is struck with great force against whatever happens to be in the way, the thighs and legs being in this case no less rigid than the other parts. The tongue is spasmodically darted out, and is often miserably torn, as the teeth are that moment snapped together; so that it is necessary to prevent this by keeping the handle of a spoon, wrapped round with soft rags, between the teeth, when this can be done. At the time that the tongue is thus thrust out, the muscular flesh, which lies between the arch of the lower jaw and head of the trachea, seems to be drawn upwards within the throat. The countenance is very much contracted, and he is in a foam of sweat, the heat being very great; and the pulse between the spasms is exceeding quick, small, and irregular, although the heart throbs so strongly, that its motions may be plainly seen, and a palpitating subfultory kind of undulation may not only be felt, but perceived all over the epigastric region. The eyes are watery and languid, and a pale or bloody froth bubbles out from between the lips. The jaws are for the most part locked fast, so that it is impossible to give drink or nourishment, nor could he swallow if any thing was put into his mouth. In this state they are commonly delirious: and as they cannot subsist many hours under so great a suspension of the vital and natural functions, a mortal anxiety ensues and releases them; oftener a continued and severe spasm finishes the tragedy, when it was before almost at an end: but most frequently a general convulsion puts a period to their sufferings; and whichever way this

happens, they for the most part relax just before death.

Tetanus.

“In the *tetanus*, the general symptoms are nearly the same as in the *opisthotonos*, except that from the first attack, the lateral, abdominal, and other anterior muscles, are equally contracted with the posterior ones; and the arms become rigid as well as the lower extremities. The abdomen is always flat and rigid as in the last stage of the *opisthotonos*, and its contents seem to be thrust up into the thorax, which at the same time appears to be much dilated. There are here also some intervals between the spasms, in the time of which the cheeks are drawn towards the ears, so that all the teeth may be seen as in the *spasmus cynicus*. Deglutition is more free in this than in the other disease; yet so far is the sick from being equally balanced between the contractions of the opposite muscles, that the head is retracted and the spine is recurvated, although not quite so much as in the *opisthotonos*. And the spasm, which commences under the sternum, is likewise common to the tetanus, which terminates as the other, and on the same fatal days. But whoever recovers from either, labours long under a general atonia; and they cannot for some months raise themselves from a supine or recumbent posture without pain, nor without help for some time.”

Prognosis and Cure. There has never been any thing like a crisis observed in these frightful cases, or favourable termination from the mere efforts of nature; and therefore all the physician's dependence must be upon art. As in cases of tetanic affections, the disease often arises from some particular irritation, the removal of this must necessarily be an important object in the cure: But where it cannot be removed, benefit may often be obtained by the prevention of its influence being communicated to the brain. When, however, that influence is communicated to the brain, a cure is to be expected only by diminishing and obviating it. This is principally brought about by the use either of those means which have a general tendency to diminish action, or of those which induce a different state of action. On these grounds the operation of those remedies which are employed with greatest success in this affection, may, we apprehend, be explained. Fortunately it has been found, that opium is capable of giving some relief, if administered in proper time, and if the disease happens not to be in the most violent degree: the warm bath must also be brought in aid; and the patients should lie horizontally in the bath, and while in it have the whole body extremely well rubbed: when taken out, they are not to be dried, but immediately put to bed wrapt in the softest blankets; and while they remain there, the belly ought either to be staped, or two or three bladders filled with warm water kept constantly lying on it. The bowels at the same time must, if possible, be kept open, by solutions of manna and *sal polychrest*, or some other purging salt, mixed with *oleum ricini*; or if that should not be at hand, with oil of sweet almonds and a little tincture of senna. The opiates are to be given in large and frequently repeated doses; such as a grain of the *extractum thebaicum*, or 20 drops of the tincture, every second or third hour; and it will be safest not to trust to the thebaic tincture which is kept ready prepared in the shops, but order the necessary dose of solid opium, and either give it in pills or dissolve it in

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Spasmi

some convenient liquid. If swallowing should be difficult, or the jaws closed up, the opium must be given in clysters; for during the whole course of the disease it will be of service to order emollient clysters to be injected from time to time, since these will answer not only as a relaxing fomentation, but also contribute to keep the intestinal canal perfectly free.

When the patients recover, they continue for a long time very relaxed and weak; and no wonder, since it is the nature of all spasmodic affections to leave behind them extreme weakness and relaxation of the muscular fibres. In order to perfect the recovery, a course of the Peruvian bark and the Peruvian balsam is to be tried; and the spine may be rubbed with spirituous liniments, or with a mixture of rum and Barbadoes tar: but these and all other stimulating things, either internally or externally, during the violence of the spasms, must, in the opinion of some practitioners, be omitted, since all of them as well as blisters have been alleged to exasperate the disease.

This, in general, is the plan of treatment recommended by Dr Chalmers.

The same dreadful disorders frequently attack young children in the warm climates. Dr Hillary tells us, that they will there arise from the same causes which usually produce convulsions with children in Britain, viz. from a retention of the meconium or first excrement after birth; or from a glutinous matter which is too often found in the intestines of young children soon after the other is discharged; or from a cheesy matter from the coagulation of the milk by an acid in the stomach; or from hard excrements; or from something taken in by the mouth which is over acrid, or too hard to digest, which irritates their tender bowels, and so produces startings and convulsive spasms, with all the other symptoms which precede and accompany convulsions in young children in Britain. And this shows how much more readily and easily the nerves are affected and irritated in that warm climate, and the *tetanus* produced from a much less cause there, than it is in Britain, where it is but seldom seen. But these causes not being timely removed, their acrimony is increased, partly by the heat of the climate, and partly by the fever which they produce, which still renders them more acrid, and so increases the irritation of their bowels, that it first brings on startings, then convulsive spasms, and regular convulsion fits; which, if not soon removed, usually end in a perfect *tetanus* there, and the disease is but seldom cured in such young children when it arrives at that state: for when the child lies in this miserable, rigid, immoveable condition, upon moving its hands or feet in the most gentle manner, or softly touching any part of its body, or giving it the least motion, even feeling its pulse in the most gentle tender manner, or the least noise, or even touching its clothes, will bring on the convulsive spasms, and cause it to be strongly convulsed backwards, or drawn into a rigid straight line, strongly extended and immoveable like a statue, and will so remain immoveable out of either of those postures for a considerable time, a minute or two; and when the disease is arrived at this degree, Dr Hillary thinks it is never cured. But if the physician be called in time, before the *tetanus* has come on (which is too seldom the case

N^o 207.

there), though he finds strong convulsive spasms have seized the child, or that it has had a convulsive fit or two, it may most commonly be relieved, the coming of the *tetanus* be prevented, and the life of the babe saved, as Dr Hillary has more than once seen, by removing and carrying off the irritating cause which stimulates their tender bowels, by such gentle evacuations as are suitable to their age; and then quieting and composing the irritation of their nerves with proper anodynes, and correcting the remaining acrimony of the nutritious juices in the *primæ viæ*.

To answer these intentions, the following method, with variations *pro re nata et pro ratione ætatis*, as the cause is different, has been found to answer the desired effect the best: R. *Seri lactis* ʒij. *Sapon. Venet.* ʒj. *Mannæ Calab.* ʒij. *vel* iij. *Ol. amygd. dul.* ʒss. *Ol. fœniculi dul. gut.* ij. *Bals. Peruv. gut.* v. *Misce, si. enema quam primum injiciendum.*

And if the symptoms of the approaching *tetanus* will permit, he gives something of the following nature to assist the operation of the clyster, and to carry off the acrimony the sooner: R. *Aq. sem. fœniculi* ʒij. *Magnes. albæ* ʒss. *Ocul. cancr. præp.* ʒj. *Syr. e cichor. cum rheo, Rosar. solut. ana* ʒij. *Misce.* Or, R. *Aq. sem. fœniculi* ʒij. *Sapon. amygdal.* ʒss. *Magnes. albæ* ʒss. *Syr. e cichor. cum rheo, Mannæ opt. ana* ʒij. *Ol. amygd. dul.* ʒij. *Misce: Exhibe cochl. parv. vel duo pro ratione ætatis omni semihora, vel omni hora, donec respond. alvus.*

Two or three stools being obtained by these, the following is exhibited in order to abate the convulsive twitchings, and prevent the *tetanus* from coming on: R. *Aq. sem. fœniculi* ʒij. *Magnes. albæ* ʒss. *Ocul. cancr. præp.* ʒj. *Moschi orient. gr.* ij. *Spir. C. C. gut.* xv. *Syr. e mecon* ʒss. *Misce: Exhibe cochl. parv. (a child's spoonful) ter quaterve de die, vel sæpius, urgent. convuls. vel spasm.*

But if the symptoms show that the *tetanus* is more immediately coming on, so that we have no time to wait till the operation of the clyster and opening laxative be over, something of the following nature must be immediately given; or the *tetanus* will come on, and most probably prove fatal to such tender babes. R. *Aq. fœniculi* ʒij. *Moschi orient. gr.* j. *Tinct. Thebaic. gut.* iij. *Syr. e mecon.* ʒij. *Misce pro duobus dos. de quibus exhibe unam quam primum, et alteram si convuls. spasm. redeunt.*

This, Dr Hillary observes, may be thought a bold attempt, to give *tinct. Thebaica* to such a tender young infant: but it is to be considered that the little patient will certainly die if the *tetanus* seize it, and that it will come on if this do not prevent it; and he has known a bold ignorant old midwife give four or five drops of that tincture to a very young infant without any prejudice more than its dosing three or four hours, though not in this case, but in one much less violent.

The clyster may be given at the same time, and the opening laxative not long after it: though it may retard the operation of that for some time, yet it operates soon after, and gives relief; after which the other medicines, and fomenting the body and anointing it as before, may be used, if the physician finds it necessary; also a little of the laxative mixture may be given once or twice a-day, if the above julep does not answer

Tetanus.

Spasmi answer that intention of keeping the child's body open for a few days afterwards, which in this case is generally found necessary to be observed.

These methods and medicines may be varied according to circumstances. For neither the same method nor the same medicines will answer in all cases, though the disease be the same; but they must be changed as the causes differ, or the constitution of the sick, or the time of the disease, or as some other circumstances may require: which is a thing of great importance, not only in this, but in the cure of most other diseases; wherefore it is mentioned here, chiefly to caution the practitioners in the West Indies.

When proper medicines are thus timely and judiciously given in this case, they seldom fail to carry off the irritating cause, quiet and ease the nerves, remove the convulsions and spasms; and consequently prevent the tetanus from coming on, and the death of the patient. But if calling in the physician be deferred till the tetanus has already strongly seized the child, as is too often the case here, neither warm bathing, fomenting, nor any other methods or medicines whatever, will remove it or its causes, nor save the life of the little tender patient.

Dr Chalmers gives an account of his having cured one child seized with a *tetanus*, by purging with an infusion of rhubarb; to which a few grains of musk, and a little *ol. tartar. per deliq.* were added, together with the warm bath, and the frequent injection of glysters made with an infusion of camomile flowers, to each of which was added a small portion of Castile soap. It is much to be regretted, however, that in those cases where the assistance of the medical art is most wanted, it most generally fails. We have been assured by a gentleman who practised for some time in the warm parts of America, that out of 30 cases of the tetanus he had seen, not one of the patients recovered, though he had given opium to the quantity of 20 grains thrice a-day; and others, he was assured, had taken 30 grains thrice a-day. In the beginning of the disease, the medicine produced a violent headach; but towards the end, it had no manner of effect whatever. In two patients, the disease came on from the slightest causes imaginable. The one accidentally fell in attempting to avoid a loaded cart, and put the heel of his shoe upon one of his thumbs in rising; the other, in avoiding the same cart, slightly ruffled the skin of his nose. Both were seized with the tetanus; and both died, notwithstanding all possible assistance was given. The former had his thumb amputated without effect.

In the Edinburgh Physical and Literary Essays, Vol. III. Dr Donald Monro describes a new method of cure, communicated to him by a gentleman who was formerly a practitioner in Jamaica. While this gentleman practised in that island, he had under his care a great number of cases of tetanus attended with the locked-jaw. At first, he used to give very freely of opium, musk, and other medicines of this class; to bleed, and make other evacuations; while he used baths, fomentations, embrocations, and other external applications, but all without the least success; and, as he had lost a great many patients without being so lucky as to make one cure, he began to believe that

VOL. XI. Part I.

this disorder always proved fatal, and was not to be cured by medicine, notwithstanding what some practitioners had alleged. However, having received an unexpected hint concerning the good effects of the mercurial ointment in such cases, he resolved to try it; and ordered the first patient that offered to be put into a warm room, and to be rubbed two or three times a-day with the ointment, till such time as a salivation was raised; when he with pleasure observed, that, as soon as the mercury began to affect the mouth, the convulsions of the muscles of the jaws, as well as all the other spasms and convulsions, ceased, and the patient was freed of all his complaints. After this, he treated every case of this kind which came under his care in the same manner, and cured twelve, which were all who applied to him for advice so early in the disorder that there was time to bring the mercury to the mouth before the fatal period was expected. A few died, in whom the disease was so far advanced before he saw them that there was not time to raise a salivation. None of the cases which were under this gentleman's care in the West Indies were the consequences of wounds or capital operations; nor has he had any opportunity of trying it since in cases of the locked jaw, which sometimes follows capital operations, owing to his having given over practice: but he thinks, that, from the similarity of the complaint, there is no doubt that the mercurial frictions would be equally efficacious in such cases, as when the disorder comes from catching cold or other such causes.

In the second volume of the Medical Transactions, we have an account of a cure performed by Dr William Carter of Canterbury, by means very different from any of those above related.—On the 17th of May 1767, the doctor was called to a strong healthy man, in the 21st year of his age, and who had been confined to his bed for three weeks. What gave rise to his present disorder was a wound on the inner ankle of his right leg, which he had received six weeks before from a joiner's chisel. At that time his mouth was so far closed, as to admit only the most liquid nourishment, which he constantly sucked through his teeth: but his legs and jaw, and the whole length of the spina dorsa, were quite immovable, being as stiff and rigid as those of a person long dead; his head was drawn backward, and he was frequently strongly convulsed. The motion indeed of both his arms was but a little impaired. From the beginning to the end, his sight, hearing, and memory, continued perfect; his appetite was good; and his senses, in the day-time, entire, though sometimes wandering in the night. As to his pulse, that was regular; if it deviated at all from the pulse of a person in health, it was rather slow than quick, and somewhat fuller than natural. Such was the situation of his patient; a detail of which had been given before the doctor set out on his journey, which he undertook with a determined resolution to make use of the method recommended by Dr Silvester, in the first vol. of Medical Observations and Inquiries, published in the year 1757, (and which has been related from Dr Chalmers and Dr Hillary.) But, on his arrival at the house, he found great quantities of the *extractum thebaicum* dissolved

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Spasmi

had been already given him; and that, for the five last days, he had taken no less than 28 grains of that medicine, with 50 grains of musk, in the space of 24 hours, without any sensible effect, except the bringing on a confused sleep, out of which he frequently awoke in great hurries, attended with a violent pain in the head, which almost deprived him of his senses. The doctor was afraid to extend the dose; and soon determined to take some other method, though at a loss what method to pursue, as, during a course of almost 30 years practice, nothing of the same kind had ever fallen under his cognizance before. Reflecting, however, that this disorder had always been deemed of the spasmodic kind, and that the good effects produced by the *extractum thebaicum* must probably be owing to the relaxing and resolving faculty of that medicine, he directed a blister to be applied between the shoulders, the whole length of the spine; the jaw to be anointed with the *oleum lateritium*; and a purge, consisting of the *tinctura sacra*, *tinctura jalappi*, and the *syrupus de rhamno cathartico*, to be given him. This was repeated three several times afterwards, at the distance of three or four days between each dose. On the intermediate days, he was ordered the *oleum succini*, the foetid gum, and the *oleum amygdalinum*. Of the first he took 30 drops, of the gum 20 grains, and of the last four ounces, in 24 hours. By these means, and these only, the convulsions soon ceased; and he grew daily better and better, till at the end of a fortnight he was able to walk about his room, and in less than three weeks became in all respects well, some small weakness in the parts only excepted. The jaw was relieved first, after that the spine, and last of all the legs. A pain and uneasiness in the places affected, neither of which he had felt before, were the forerunners of his approaching amendment.

From all this it seems reasonable to conclude, either that there is no certain remedy for tetanus in all cases, or that the medicines which prove effectual in one constitution will fail in another. Thus, it is possible, that in cases where opium proves ineffectual, mercury may be a remedy; and, on the contrary, where mercury fails, opium may be effectual; and even where both are ineffectual, the antispasmodics recommended by Dr Carter may be of use. It is therefore necessary for physicians to be extremely careful to observe the effects of the first doses of their remedies: for if the symptoms show not the least appearance of remission after a large dose of opium, it is improbable that it can be cured by a repetition of the medicine; and as no time can be lost with safety, it will then be proper to apply mercurial ointment, or whatever else may be judged proper.—In the Edinburgh Medical Commentaries we have an account of the cold bath being used as a remedy, by Dr Thomas Cochrane, at that time physician at Nevis, now at Edinburgh. The patient was an East Indian boy, who had been gored by a cow, and afterwards exposed to a rainy damp air for some hours. Dr Cochrane ascribes his cure to the cold bath, which was applied by dashing the water upon his body. But as the patient at the same time got laudanum, at first in the quantity of 200 drops a-day, and afterwards in still larger doses; and had besides his throat and shoulders anointed with warm oil of turpentine, was bled, and had lenient glysters and laxatives; it is by no means easy to say what share the cold bath had in

his cure. Dr Cochrane, however, says he has heard of some cases being treated successfully by cold water and the Peruvian bark in St Eustatia and St Kitt's, and in another letter mentions his having used the cold bath in other cases of tetanus with success. But since Dr Cochrane's publication, a more full and satisfactory account of the benefit of this practice has been communicated in a paper published by Dr Wright, in the sixth volume of the London Medical Observations. Dr Wright gives a particular account of six cases, in which the best effects were obtained from dashing cold water upon the patient; and he observes, that since he first used this method of cure he never failed in one instance to effect a recovery, and that in a shorter time than by any other method hitherto proposed. This practice has on some occasions been adopted by practitioners in Britain, although here the disease is a much less frequent occurrence. It has particularly been employed with success by Dr Currie of Liverpool; and we hope that still more extensive practice will confirm the benefit to be derived from it, although not in every instance, yet in many cases of this affection.

Very lately a different mode of cure in this affection has been recommended by Dr Rush, professor of medicine in Philadelphia, in a paper intitled Observations on the Cause and Cure of Tetanus, published in the second volume of the Transactions of the American Philosophical Society. Dr Rush, viewing tetanus as being a disease occasioned by relaxation, thinks the medicines indicated to cure it are such only as are calculated to remove this relaxation, and to restore tone to the system. On this ground he recommends the liberal use of wine and the Peruvian bark; and tells us, that he has employed them with success in actual practice. When the disease arises from a wound of any particular place, he recommends stimulants to the part affected; such as dilatation of the wound, and filling it with oil of turpentine. How far this practice will be confirmed by more extensive experience, we cannot take upon us to determine. We may only observe, that a very contrary practice has been recommended as highly successful by some practitioners in Spain, where tetanic affections are a very frequent occurrence in consequence of slight accidents. There gentle emollients are strongly recommended, particularly immersing the wounded part in tepid oil for the space of an hour or so at a time, and repeating this application at short intervals. By this mode many cases, after very alarming appearances had taken place, are said to have been completely and speedily removed. While the practice is very simple, it appears at the same time in many respects very rational, and may perhaps be considered as well deserving a trial in the first instance.

GENUS XLIX. TRISMUS.

The LOCKED JAW.

Trismus, *Sauv.* gen. 117. *Lin.* 124. *Sag.* gen. 223. *Capistrum*, *Vog.* 208.

Sp. I. TRISMUS NASCENTIUM.

Locked Jaw in children under two months old.

Trismus nascentium, *Sauv.* sp. 1. *Heister* Comp. Med. Pract. cap. xv. § 10. *Cleghorn* on the Diseases of Minorca, Introd. p. 33. *Hofer* in Act. Helvet. tom. i. p. 65.

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This distemper is so closely connected with the tetanus, that it ought rather to be accounted a symptom of the tetanus than a primary disease. We have accordingly discussed it under TETANUS.

282

Sp. II. The TRISMUS from Wounds or Cold.

Trismus traumaticus, *Sauv.* sp. 2. *Lond. Med. Obs.* Vol. I. art. 1. 7. Vol. II. 34. Vol. III. 31. Vol. IV. 7.

Angina spasmodica, *Sauv.* sp. 18. *Zwingeri Act. Helvet.* Tom. III. p. 319.

Convulsio a nervi punctura, *Sauv.* sp. 2.

Trismus catarrhalis, *Sauv.* sp. 15. *Hillary's Barba-* does, 221. *Lond. Med. Obs.* Vol. IV. 7.

The internal remedies proper in all cases of the locked jaw, from whatever cause it may proceed, have been already mentioned under TETANUS: the external treatment of wounded parts which may give occasion to it belongs to the article SURGERY. But of this also we have offered some observations under the head of Tetanus; and, indeed, trismus may be considered as being merely an incipient tetanus, or rather a slight degree of that disease.

283

GENUS L. CONVULSIO. CONVULSIONS.

Convulsio, *Sauv.* gen. 128. *Lin.* 142. *Vog.* 191. *Sag.* gen. 235.

Convulsio universalis, *Sauv.* sp. 11.

Hieranosos, *Lin.* 144. *Vog.* 190.

Convulsio habitualis, *Sauv.* sp. 12.

Convulsio intermittens, *Sauv.* sp. 16.

Convulsio hemitotonos, *Sauv.* sp. 15.

Convulsio abdominis, *Sauv.* sp. 10.

Convulsio ab inanitione, *Sauv.* sp. 1.

Convulsio ab onanismo, *Sauv.* sp. 13.

Scelotyrbe festinans, *Sauv.* sp. 2.

Description. When convulsions attack only particular parts of the body, they are generally attended with some kind of paralysis at the same time, by which means the affected parts are alternately convulsed and relaxed; a permanent convulsion, or unnatural contraction of particular muscles, is called a *spasm* or *cramp*. These partial convulsions may attack almost any part of the body; and are not unfrequently symptomatic, in fevers, the cholera morbus, &c. The involuntary startings of the tendons, the picking of the bed-clothes, &c. in acute diseases, &c. are all of them convulsive disorders. Convulsions, even when most generally extended, differ from epilepsy in not being attended with any mental affection or abolition of sense, and not followed by the same torpid state.

Causes. Convulsions, not only of particular parts, but also over the whole body, often take place from causes not very evident. Sometimes they seem to depend on a certain delicacy or irritability of the nervous system, which is framed with such exquisite sensibility as to be strongly affected by the slightest causes. Delicate women are often subject to hysterical convulsions, and also hypochondriac people. Convulsions, however, often take their rise from wounds, irritations of the stomach and intestines by worms, poisons, violent cathartics and emetics, &c.; and very often they are

symptomatic, as in dentition, the small-pox, and many kinds of fevers.

Prognosis. Except in some few cases, convulsive disorders are always to be dreaded; but less in young people than in such as are advanced in life. Those which attack girls under the age of puberty, will generally cease on the appearance of the menses; and boys have likewise a chance of being relieved as they advance in life: but in grown up people, unless the cause be very evident, a cure is hardly to be expected, especially after the disease has been of long continuance.

Cure. The treatment is very much the same with that of epilepsy, afterwards to be considered: but a recovery is most frequently obtained by the removal of the existing cause.

GENUS LI. CHOREA. ST VITUS'S DANCE.

284

Scelotyrbe, *Sauv.* gen. 136. *Sag.* 243.

Chorea, *Lin.* 139.

Scelotyrbe chorea Viti, *Sauv.* sp. 1.

Chorea St Viti, *Sydenh. Sched. Monit.*

Description. This disease shows itself first by a kind of lameness or instability of one of the legs, which the patients draw after them in a ridiculous manner: nor can they hold the arm of the same side still for a moment; for if they lay it on their breast, or any other part of their body, it is immediately forced away by a convulsive motion. If they be desirous of drinking, they use a number of odd gesticulations before they can bring the cup to their mouths, because their arms are drawn this way and that by the convulsions which affect them.

Causes, &c. The general cause of St Vitus's dance is a debility of the system; and hence we find it attacks only weakly boys, and more especially girls, when under the age of puberty. But the particular causes determining the muscles to be affected in such and such a manner are entirely unknown.

Prognosis. As this disorder scarce ever attacks any persons but such as are under the age of puberty, there is almost a certain prospect of its being then cured, though generally the disorder is easily removed before that time.

Cure. See EPILEPSY.

GENUS LII. RAPHANIA.

285

Raphania, *Lin.* 155. *Vog.* 143. *Lin. Amœn. Acad.* Vol. VI.

Convulsio raphania, *Sauv.* sp. 7.

Eclampsia typhodes, *Sauv.* sp. 1. *Sennert de febr.* l. iv. cap. 16. *Gregor. Horst. Oper.* tom. II. l. viii. obs. 22. *Brunner in Ephem. Germ. D.* iii. A. ii. obs. 224. *Willisch. ibid.* cent. vii. obs. 13. *Wepfer. de Affect. Capitis,* obs. 120. *Breslauer Sammlung* 1717, Julio, Septembri, & Decembr. *Ibid.* 1723, Januar. A. N. C. Vol. VII. obs. 41. *Bruckmann. Com. Norimb.* 1743, p. 50.

Description. According to Sauvages, this distemper begins with a lassitude of the limbs, transient colds and shiverings, pain of the head, and anxieties of the præcordia. Then come on spasmodic startings of the fingers and feet; also of the tendons and muscles, con-

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spicuous below the skin. The disease is attended with heat, fever, delirium, stupor, constriction of the breast, suffocating dyspnœa, loss of voice, horrid convulsions of the limbs, preceded by a formication, or sensation as of ants or other small insects creeping on the parts. In this state of the disease, the convulsive paroxysms are attended with most violent pains in the limbs, vomiting, or diarrhœa, with the passing of worms, thirst, and in young people an unnatural hunger. It continues from ten days to three months. About the eleventh or twentieth day, some are relieved by copious sweats, or purple exanthemata: while others fall into a tabes, with stupor, or stiffness of the joints.

Causes, &c. This disease is frequently epidemic in Suabia and other parts of Germany; where it is said to be produced by seeds of radishes, which are often mixed with rye in that country; and from this supposed cause the disease takes its name. It is also, however, a very common opinion, that this disease depends on the rye used in diet being of a bad quality, and particularly containing a large proportion of what is called *spurred rye*.

Cure. In this affection, also, the cure, as far as it has yet been discovered, is very much the same with that of epilepsy, the disease next to be considered.

286

GENUS LIII: EPILEPSIA.
FALLING-SICKNESS.

Epilepsia, *Sauv.* gen. 134. *Lin.* 143. *Vog.* 188.
Sag. gen. 24. *Boerb.* 1071. *Hoffm.* III. 9. *Junck.* 54.

Eclampsia, *Sauv.* gen. 133. 180. *Sag.* gen. 240.

287

Sp. I. The CEREBRALIS, or *Epilepsy* depending on an affection of the Brain.

Epilepsia plethorica, *Sauv.* sp. 1.
Eclampsia plethorica, *Sauv.* sp. 7.
Epilepsia cachectica, *Sauv.* sp. 2.?

288

Sp. I. The SYMPATHICA, or *Sympathetic Epilepsy*, with a sensation of something rising from a certain part of the body towards the Head.

Epilepsia sympathica, *Sauv.* sp. 8.
Epilepsia pedisympomatica, *Sauv.* sp. 6.

289

Sp. II. The OCCASIONALIS, or *Epilepsy* arising from various irritating Causes.

Epilepsia traumatica, *Sauv.* sp. 13.
Eclampsia traumatica, *Sauv.* sp. 9.
Epilepsia a dolore, *Sauv.* sp. 10.
Epilepsia rachialgica, *Sauv.* sp. 14.
Eclampsia a doloribus, *Sauv.* sp. 4.
a. Rachialgica.
b. Ab otalgia.
c. A dentitione.
Eclampsia parturientium, *Sauv.* sp. 3.
Eclampsia verminosa, *Sauv.* sp. 2.
Eclampsia ab atropa, *Sauv.* sp. 11.
Eclampsia ab œnanthe, *Sauv.* sp. 12.
Eclampsia a cicuta, *Sauv.* sp. 13.
Eclampsia a coriaria, *Sauv.* sp. 14.
Epilepsia exanthematica, *Sauv.* sp. 11.
Epilepsia cachectica, *Sauv.* sp. 2.
Epilepsia stomachica, *Sauv.* sp. 3.

Eclampsia a saburra, *Sauv.* sp. 5.

Epilepsia a pathemate, *Sauv.* sp. 7.

Eclampsia ab inanitione, *Sauv.* sp. 8.

Epilepsia neophytorum, *Sauv.* sp. 15.

Epilepsia.

Description. The epilepsy often attacks suddenly, and without giving any warning: but more frequently is preceded by a pain in the head, lassitude, some disturbance of the senses, unquiet sleep, unusual dread, dimness of sight, a noise in the ears, palpitation of the heart, coldness of the joints, and in some there is a sensation of formication, or a cold-air, &c. ascending from the lower extremities towards the head. In the fit, the persons fall suddenly to the ground (whence the name of the *falling-sickness*), frequently with a violent cry. The thumbs are shut up close in the palms of the hands, and are with difficulty taken out; the eyes are distorted, so that nothing but the whites are to be seen; all sensation is suspended, inasmuch, that by no smell, noise, or otherwise, nor even by pinching the body, can they be brought to themselves; they froth at the mouth, with a hissing kind of noise; the tongue is frequently lacerated by the teeth, and there is a violent convulsive motion of the arms and legs. Sometimes, however, the limbs, instead of being agitated by convulsive motions, are all stiff, and the patients are as immoveable as a statue. In children the penis is erected; and in young men there is an emission of the semen, and the urine is often thrown out to a considerable distance. At length there is a remission of the symptoms, and the patients recover after a longer or shorter interval; when they complain of a pain, torpor, or heaviness of the head, with a lassitude of all the joints.

Causes, &c. The dissection of epileptic subjects has shown a variety of morbid appearances, which may be supposed to have contributed to the disease; such as, indurations in the brain or meninges; caries of the internal surface of the cranium; projections of the bony substance of the same, pressing upon the brain; collections of serum or purulent matter, and earthy concretions within the skull; besides many others which are recorded by Bonetus, Morgagni, and Lieutaud. But often the causes are impossible to be discovered; for even in those who have died of the disease, the brain and all other parts of the nervous system have been apparently sound. The disease will attack strong as well as weak people; and in those who are subject to it, any considerable excess in drinking, a surfeit, violent passion, or venery, &c. will certainly bring on a fit. Some have epileptic paroxysms returning periodically after considerable intervals; and the disease has been thought to have some dependence on the phases of the moon.

Prognosis. If the epilepsy comes on before the time of puberty, there are some hopes of its going off at that time. But it is a bad sign when it attacks about the 21st year, and still worse if the fits grow more frequent; for then the animal-functions are often destroyed, as well as those of the mind, and the patient becomes stupid and foolish. Sometimes it will terminate in melancholy or madness, and sometimes in a mortal apoplexy or palsy. It has sometimes, however, been observed, that epilepsies have been removed by the appearance of cutaneous diseases, as the itch, small-pox, measles,

Spasmi measles, &c. While the disease is recent, therefore, we are not to despair of a cure; but if it be of long standing, or hereditary, there is very little reason to expect that it can be removed.

Cure. From the symptoms occurring in epilepsy, which consist of involuntary convulsive motions, and an affection of the mental powers, there is reason to conclude, that the fit immediately depends on the induction of some peculiar action of the brain; but that convulsions may ensue from this cause, it would seem necessary that there should also occur a peculiar disposition to action in the moving fibres. On this ground then, we may suppose the cure to be chiefly expected on one of two principles; either by our being able to prevent the peculiar action of the brain, or to remove the disposition to action in the moving fibres. The first is chiefly to be accomplished by the removal of irritating causes, by preventing their influence from being propagated to the brain, when they are applied to remote parts; or by counteracting their influence, from inducing in the brain a state of action different from that to which they give rise. The second end is chiefly to be obtained by diminishing the mobility of the nervous energy, and by strengthening the tone of the moving fibres. It must, however, be allowed, that in all convulsive disorders, excepting those which are cured by nature about the time of puberty, the cure by artificial means is very difficult. Numberless specifics have been recommended, but all of them have failed of answering the expectation. When the cause can be discovered, that must be removed. In other cases, the cold bath, valerian root, castor, musk, opium, the foetid gums, Peruvian bark, with the whole tribe of nervous and antispasmodic medicines, have been recommended: but none of these, or indeed any combination of them, have been found generally useful; though the lighter, or symptomatic cases, may often be removed by them.

Of late the *calx*, improperly called the *flowers*, of zinc, have obtained such reputation in convulsive disorders as to be received into the Edinburgh Pharmacopœia under the title of *zincum ustum*. They were proposed by Dr Gaubius as an antispasmodic, in his *Adversaria*; and their efficacy has since been confirmed by various observations. In an inaugural dissertation published by Dr Hart at Leyden, the medical virtues of the flowers of zinc are considered. He observes, that they have long been used externally, chiefly for inflammations of the eyes from acrid lymph. Glauber first proposed the internal use of them; and Gaubius discovered them to be the remedy of a celebrated empiric Luddemannus, which he styled his *luna fixata*. After this he exhibited them with success in convulsive and spasmodic diseases. Dr Hart supposes, that they act either as absorbents, or as possessing a specific virtue: but is a strong advocate for their efficacy, on whatever principles they may operate; and, in favour of his opinion, relates seven cases in which they proved successful. A girl of 17 years of age, was seized with a slight *chorea* from a fright; and when the disease had continued six days, she began to take the flowers of zinc, by which her disorder was removed in less than three weeks. Her cure required only 16 grains of the *calx*. In a few month

the complaints returned, from the same cause; and were removed by four grains of the medicine divided into ten doses.—A boy of about four years old, labouring under a real epilepsy, suspected to be hereditary, was cured by a grain of the flowers of zinc taken every day for some time.—A man 50 years old, thrown into convulsions from a violent passion, was cured by a grain of the *calx* taken every two hours. The disease had gone off upon venesection and the use of some other remedies; but returned again in two weeks, when it was finally removed by the zinc. The two last cases are related from Dr Gaubius, who affirms that he has used the flowers of zinc in cases of the chincough, hysteric hiccough, and *spasmus cynicus*; that they frequently did more than other medicines, but were by no means successful in every case. The other cures mentioned by Dr Hart are similar to those above-mentioned. But it does not appear that he ever saw a confirmed epilepsy cured by this medicine.

In the first volume of *Edinburgh Medical Commentaries*, we have an account by Mr Benjamin Bell, of a man afflicted with a confirmed epilepsy, who was considerably relieved by the flowers of zinc. He was about 35 years of age, and had been subject to the disease for 10 years. At first the paroxysms did not return oftener than once a month; but becoming gradually more frequent, they came at last to be in a manner continual, insomuch that he would have ten, eleven, or twelve attacks in a day, and very seldom had an interval of 24 hours. His memory and judgment were so much impaired, that he could scarce answer a question distinctly. He had used a great variety of medicines without any benefit. About three years before applying to Mr Bell, he had violent rheumatic pains in his limbs, which left such an extreme debility that he was never afterwards able to get out of bed without the assistance of two or three people.

On the 22d of October 1772, Mr Bell found him in the above mentioned condition, and prescribed as follows:

R. Flor. Zinc. gr. xxiv.

Ext. Gent. 3i. M. f. mass. et divid. in pill. xxiv. cap. i. m. & v.

He continued to take two pills a-day till the first of November, without any sensible benefit. The dose was then doubled, and continued till the 12th; when the fits, though equally violent, became less frequent. The medicine was gradually augmented to ten pills thrice a-day; and the consequence was, that his memory and understanding returned, the fits became much lighter and less frequently repeated, though the disease could not be radically subdued.

In a young man labouring under the epilepsy, in whom the fits were preceded by an *aura epileptica*, or sensation like air arising from the inside of the knee-joint, the disease was also relieved, but not cured.

Dr Percival relates some cases of epilepsy which seem to have been cured by the flowers of zinc; and in other cases, where the disease was not entirely removed by it, the spasms were nevertheless much mitigated. He did not observe that it promoted any evacuation; excepting that in some, upon being first taken, it occasioned a little sickness, which went off with a stool. He adds, that those apothecaries who do not prepare this

Spasmi

this medicine themselves, are in great danger of being imposed upon, as it is sometimes a mere corrosion of the zinc by an acid, and even imperfectly washed.

The good effects of calcined zinc as an antispasmodic are also attested by Dr Haygarth of Chester and Dr White of York. The former gives a test of their goodness which may be of use to those who do not prepare them, namely, that the true flowers of zinc, when strongly heated, become yellow, but reassume their white colour on being allowed to cool. The latter gives a case of hieranosis, or strange convulsions of almost all the muscles of the body, cured by zinc, after a number of other remedies had failed. The patient, however, had been formerly much relieved by Ward's antimonial pill.

In Dr Home's clinical experiments and histories, also, calcined zinc is mentioned as having been found serviceable upon trial in the Royal Infirmary of Edinburgh. Of the other principal remedies which have been recommended for the epilepsy and other convulsive disorders allied to it, we have the following account by the same author.

1. *The cold-bath* was tried in one who had a convulsive disorder of one side, but the symptoms were rendered much worse by it.

2. *Venesection*. Not to be depended on in convulsions.

3. *Electricity*. In two convulsive cases was of no service.

4. *Epispastics*. Do not seem to be powerful antispasmodics.

5. *Valerian*. In nine convulsive cases, for which this remedy hath been reckoned almost a specific, it not only made no cure, but could scarcely be reckoned to do any good. Dr Home supposes that it acts as a bitter tonic, something like the *serpentaria Virginiana*. Though much used at present, he tells us it has always appeared to him a weak, often a hurtful, medicine.

6. *Musk*. Six convulsive patients treated with large doses of this remedy, were neither cured nor in the least relieved.

7. *Castor* seems to be unworthy of the confidence formerly put in it. It is indeed possessed of a sedative power, and therefore may be useful in spasmodic febrile cases.

8. *Asafetida* has considerable antispasmodic powers, but is not always successful. It heats and quickens the pulse; and is therefore improper in cases attended with inflammation. It disagrees with some from a peculiarity of constitution; exciting pain in the stomach, and vomiting; but this can be known only after the exhibition of the medicine.

9. *Cortex Peruvianus*. Of seven spasmodic cases, six were either cured or mitigated. An epilepsy of eight years standing was very much relieved by taking the bark for a month, and one of two years standing by taking it for ten days. But the medicine is of a heating nature, and therefore is not to be employed in cases attended with inflammatory symptoms.

10. *Peony root* was given to two epileptic patients without the least success.

11. *Viscus quercinus*, or mistletoe, was given in the quantity of two scruples five times a-day to an epileptic patient, without success.

12. *Extractum hyosciami* was given to an epileptic patient, to one afflicted with the hemitonus, and to

one who laboured under the hysteric affection, without the least good effect.

13. *Folia aurantiorum* were exhibited with the like bad success. Five drachms of the powdered leaves were taken at once without any sensible effect.

14. *Cardamine pratensis*, in three epileptic cases, was not attended with any success.

15. *Opium* did no good.

16. *Cuprum ammoniacale* made no cure in four cases of epilepsy in which it was tried.

That in many cases all these remedies have been employed without success, is not to be denied: and indeed it may with confidence be asserted, that a great majority of cases of epilepsy are incurable by any remedy that has yet been discovered. At the same time, as there is incontrovertible evidence that some of them have succeeded at least in certain cases, the more powerful may always be considered as deserving a fair trial. The cuprum ammoniacum, in particular, seems well intitled to the attention of practitioners; for though it be a medicine of great activity, yet under prudent administration it may be employed even with very young subjects without any hazard; and in several inveterate cases, which had obstinately resisted other medicines, it has brought about a complete recovery.

GENUS LIV. PALPITATIO.

PALPITATION of the HEART.

290

Palpitatio, *Sauv.* gen. 130. *Lin.* 132. *Vog.* 213.

Sag. 237. *Hoffm.* III. 83. *Junck.* 33.

THE palpitation of the heart is sometimes so violent, that it may be heard at a considerable distance. It may proceed from a bad conformation of the heart itself, or some of the large vessels. It may also be occasioned by wounds or abscesses in the heart; or it may proceed from polypous concretions or ossifications of that viscus, or from plethora, fear, or spasmodic affections of the nervous system. When it proceeds from diseases of the heart or large vessels, it is absolutely incurable. In spasmodic cases, the remedies above related may be used. If the patient be plethoric, bleeding will probably remove the disorder, at least for the present.

GENUS LV. ASTHMA.

291

Asthma, *Sauv.* gen. 145. *Lin.* 161. *Vog.* 268.

Sag. gen. 282.

Asthma convulsivum, et spasmodico-flatulentum, *Hoffm.* III. 94.

Asthma spasticum, *Junck.* tab. 51.

Sp. I. Spontaneous ASTHMA.

Asthma humidum, *Sauv.* sp. 1. Flatulentum, *Floyer* on the Asthma, chap. i.

Asthma convulsivum, *Sauv.* sp. 2. *Willis* Pharm. rat. P. II. sect. i. cap. 12.

Asthma hystericum, *Sauv.* sp. 3. *Floyer* on the Asthma, chap. i.

Asthma stomachicum, *Sauv.* sp. 8. *Floyer*, Scheme of the species of Asthma. Periodic Asthma 6.

Orthopnoea spasmodica, *Sauv.* sp. 3.

Orthopnoea hystERICA, *Sauv.* sp. 4.

Sp. II. The Exanthematic ASTHMA.

Asthma exanthematicum, *Sauv.* sp. 11.

Asthma cachecticum, *Sauv.* sp. 13.

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Sp. III. The Plethoric ASTHMA.

Asthma plethoricum, Sauv. sp. 15.

THE asthma is a chronic disease, which may continue to give very great distress, at intervals, for a considerable number of years. Sir John Floyer, when he wrote his celebrated treatise, had laboured under repeated paroxysms for 30 years.

The common distinction is into *humid* and *dry*; the former is accompanied with an expectoration of mucus or purulent matter, but the latter is not. In the genuine humoral asthma, the patients are obliged to lean forward; the inspiration is short and spasmodic; and the expiration very slow.

Asthmatic persons have generally some warning of the attack, from a languor, loss of appetite, oppression, and swelling of the stomach from flatulence, which precede the fit; but it is usually in the middle of the night that the violent difficulty of breathing comes on.

The duration of the paroxysm is uncertain, as it will sometimes terminate in three or four hours, while at other times it shall continue for as many days; nay, it has been known to last three weeks without intermission. While it subsists, the patient is in very great distress, not being able to lie in bed, nor scarcely to speak or expectorate, so great is the difficulty of breathing; and yet, notwithstanding all this apparent interruption to the free passage of the blood through the lungs, an inflammation here seldom or never supervenes a fit of the asthma. As the paroxysm wears off, and the breathing becomes free, there is more or less of an expectoration of mucus; and the urine, from being pale and limpid, becomes high-coloured, and lets fall a copious sediment.

In order to obtain relief in the fit, we must sometimes bleed, unless extreme weakness or old age should forbid, and repeat it according to the degrees of strength and fulness: a purging clyster, with a solution of asafœtida, must be immediately injected; and if the violence of the symptoms should not speedily abate, it will be proper to apply a blistering plaster to the neck or breast.

In the height of the paroxysm, an emetic might be followed by dangerous symptoms, as it would increase the accumulation of blood in the vessels of the head; but vomiting will often prevent a fit of the asthma, especially if the stomach should chance to be loaded with any sort of saburra. A very strong infusion of roasted coffee has been found to give ease in an asthmatic paroxysm.

Sir John Pringle says it is the best abater of the paroxysms of the periodic asthma that he has seen. The coffee ought to be of the best Mocco, newly burnt, and made very strong immediately after grinding it. He commonly ordered an ounce for one dish; which is to be repeated fresh after the interval of a quarter or half an hour; and which is to be taken without milk or sugar. The medicine in general is mentioned by Musgrave in his treatise *de Arthritide anomala*; but he first heard of it from a physician in Litchfield, who had been informed by the old people of that place, that Sir John Floyer, during the latter part of his life, kept free from, or at least lived easy under, his asthma, from the use of very strong coffee. This discovery, it seems, he

made after the publication of his book upon that disease. Dr Percival says he has frequently directed coffee in the asthma with great success.

In the intervals of the fits, persons subject to the asthma, especially the humid species, should take emetics from time to time. An infusion of tobacco is an emetic that has been said to be very serviceable in some asthmatic cases; but its operation is both so distressing and so dangerous, that it will never probably be introduced into common use as an emetic; and smoking or chewing the same has been known to prevent the frequency and severity of the paroxysms. Asthmatic patients may also use the *lac ammoniaci*, with a due proportion of *oxymel scilliticum* and *vinum antimoniale*, with a view to promote expectoration; or the gum ammoniac, and others of similar virtues, may be formed into pills, and combined with soap, as mentioned for the dyspnoea pituitosa; or a mass may be composed of asafœtida and balsam of Tolu, with syrup of garlic; and these pills may be washed down by a medicated wine, impregnated with squills, horse-radish root, and mustard-seed; or a strong bitter infusion, with a little antimonial wine.

In some cases crude mercury will be found serviceable; in others flowers of sulphur, made into an electuary with honey or syrup of garlic; and if, notwithstanding the use of these things, a costive habit should prevail, it will be necessary, from time to time, to give a few grains of pills of aloes and myrrh, soap and aloes, or a mass of equal parts of rhubarb, scammony, and soap.

The *dry* or *spasmodic asthma*, during the extreme violence of the fit, is best relieved by opiates; and sometimes very large doses are required. But in order to obtain permanent relief, nothing is found to answer better than ipecacuanha in small doses. Three, five, eight, or ten grains, according to the strength and constitution of the patient, given every other day, have been productive of the happiest effects; acting sometimes as an evacuant, pumping up the viscid phlegm; at others, as an antispasmodic or sedative. Issues are generally recommended in both species, and will often be found useful.

Changes of weather are usually felt very sensibly by asthmatic people, who in general cannot live with tolerable ease in the atmosphere of large cities; though we shall sometimes meet with patients who agree better with this air, which is so replete with gross effluvia of various kinds, than with the purest that can be found in country situations. And some are found who breathe with the most ease in a crowded room, with a fire and candles.

A light diet of meats that are easy of digestion, and not flatulent, is requisite for asthmatic people; and the exercise of riding is indispensably necessary.

When the asthma is found to depend on some other disease, whether it be the gout or an intermittent fever, or when it proceeds from the striking in of some cutaneous eruption, regard must always be had to the primary disease: thus, in the *asthma arthriticum*, sinapisms to the feet, or blistering, will be absolutely necessary, in order, if possible, to bring on a fit of the gout. And when the dregs of an ague give rise to an asthma, which is termed *febriculorum*, and invades at regular intervals, we must have recourse to the Peruvian.

S. afmi vian bark. The *asthma exanthematicum* will require blisters or issues, to give vent to the acrid matters which were repelled from the surface of the body; and courses of sulphureous waters, goat's whey, and sweetening diet-drinks, or perhaps mercurial alteratives, in order to correct the sharpness of the juices.

292

GENUS LVI. DYSPNOEA.
Habitual DIFFICULTY OF BREATHING.

Dyspnœa, *Sauv.* gen. 144. *Lin.* 160. *Vog.* 267.
Sag. 251. *Junc.* 32.

293

Sp. I. The Catarrhal DYSPNOEA.

Asthma catarrhale, *Sauv.* sp. 16.
Asthma pneumonicum, *Willis Pharm. rat.* P. II. sect. i. cap. 12.
Asthma pituitosum, *Hoffm.* III. sect. ii. cap. 2. § 3.
Asthma pneumodes, *Sauv.* sp. 17.

This is readily known by the symptoms of pneumonia and catarrh attending it, and to the removal of these symptoms the care of the physician must be principally directed.

294

Sp. II. The Dry DYSPNOEA.

Dyspnœa a tuberculis, a hydatibus, &c. *Sauv.* sp. 2.
4. 5. 20.
Orthopnœa a lipomate, *Sauv.* sp. 18.

This is generally accompanied with a phthisis pulmonalis; but Sauvages mentions one species of phthisis to which the dry dyspnœa seems more particularly to belong. The patients fall away by degrees, and have a great difficulty of breathing, continual thirst, and little or no spitting. When opened after death, their lungs are found not to be ulcerated, but shrivelled and contracted as if they had been smoke-dried. Goldsmiths and chemists are said to be subject to this disease by reason of the vapours they draw in with their breath. Sauvages doth not mention any particular remedy. Shortness of breath arising from *tubercles*, as they are termed, or a scirrhus enlargement of the lymphatic glands which are dispersed through the lungs, is commonly found in scrofulous habits, and may be distinguished by the concomitancy of those external swellings and appearances which particularly mark the scrofula. This species of dyspnœa generally ends in a phthisis. Courses of goat's whey, and of sea-water, have been known to do service; but it must be confessed, that a perfect cure is seldom obtained. Issues are of use in these cases, as they appear to prevent the ill effects of an over-fulness, if it should happen at any time to supervene.

295

Sp. III. DYSPNOEA from Changes in the Weather. (*Sauv.* sp. 12.)

This seems to be a disease entirely spasmodic, and the antispasmodics already related are accordingly indicated.

296

Sp. IV. The DYSPNOEA from Earthy Substances formed in the Lungs.

Sauvages mentions this disease as much more common in brutes than in the human race: but Dr Cullen mentions his having seen some instances of it; and we have several accounts by different authors of calculous
Nº 207.

matters being coughed up by people labouring under a dyspnœa, and threatened with consumption. In three cases of this kind which fell under Dr Cullen's inspection, there was no appearance of earthy or stony concretions in any other part of the body. The calcareous matter was coughed up frequently with a little blood, sometimes with mucus only, and sometimes with pus. In one of these cases, an exquisite phthisis came on, and proved mortal: in the other two the symptoms of phthisis were never fully formed; and after some time, merely by a milk-diet and avoiding irritation, the patients entirely recovered.

Sauvages also greatly recommends milk in these cases, and soap for dissolving the concretions. The reason why brutes are more subject to these pulmonary calculi than mankind, is, that they very seldom cough, and thus the stagnating mucus or lymph concretes into a kind of gypseous matter.

Sp. V. The Watery DYSPNOEA.

297

Dyspnœa pituitosa, *Sauv.* sp. 1.
Orthopnœa ab hydropneumonia, *Sauv.* sp. 12.

This may arise from too great a defluxion of mucus on the lungs, or from an effusion of serum, as is mentioned under the pneumonia. The treatment of the disease may be gathered from what has been already said under the heads of pneumonia, catarrh, empyema, &c.

Sp. VI. The DYSPNOEA from Corpulency.

298

Othopnœa a pinguedine, *Sauv.* sp. 6.

There have been many instances of suffocation and death occasioned by too great corpulency. These fatal effects, however, may be almost always avoided if the persons have resolution to persist in an active and very temperate course of life; avoiding animal-food, much sleep, and using a great deal of exercise. In the third volume of the Medical observations, however, there is an extraordinary instance of internal obesity which neither showed itself externally, nor could be removed by any medicines.

Other species of dyspnœa have been considered under PHTHISIS. It is frequently symptomatic of diseases of the heart and large vessels, or swellings of the abdomen, &c.

GENUS LVII. PERTUSSIS.
CHINCOUGH.

299

Pertussis Sydenham, Ed. Leid. p. 200. 311. 312.
Huxham de aere, ad. ann. 1732.
Tussis convulsiva, five *ferina*, *Hoffm.* III. 111.
Tussis ferina, *Sauv.* sp. 10. *Sag.* sp. 10.
Tussis convulsiva, *Sauv.* sp. 11. *Sag.* sp. 11.
Amphimerina tussiculosa, *Sauv.* sp. 13.

Description. This disease comes on at first like a common cold; but is from the beginning attended with a greater degree of dyspnœa than is common in catarrh; and there is a remarkable affection of the eyes, as if they were swelled, and a little pushed out of their sockets. By degrees the fits of coughing become longer and more violent, till at last they are plainly convulsive, so that for a considerable time the patient cannot respire, and when at last he recovers his breath, inspiration is performed with a shrill kind of noise like the

Spasmi the crowing of a cock. This kind of inspiration serves only as an introduction to another convulsive fit of coughing, which is in like manner followed by another inspiration of the same kind; and thus it continues for some time, very often till the patient vomit, which puts an end to the paroxysm at that time. These paroxysms are attended with a violent determination of the blood towards the head, so that the vessels become extremely turgid, and blood not unfrequently flows from the mouth and nose. The disease is tedious, and often continues for many months. It is not commonly attended with fever.

Causes, &c. The chincough is an infectious disorder, and very often epidemic; but the nature of the contagion is not understood; at least it is no farther understood than that of small-pox, measles, or similar epidemics. We well know that it is from a peculiar and specific contagion alone that this disease, as well as the others above-mentioned, can arise. But with regard to the nature of any of them, we are totally in the dark. It generally attacks children, or adults of a lax habit, making its attack frequently in the spring or autumn; at the same time, when this contagion is introduced into any town, village, or neighbourhood, it will rage epidemically at any season. Those alone are affected with this disease who have never before been subjected to it. For in this affection, as well as in small-pox, having had the disease once, gives defence against future contagion. Every individual, however, does not seem to be equally readily affected with this contagion; like other contagious diseases occurring only once in a lifetime, it may naturally be expected to be more frequent among children than at any other period of life. But many, though frequently exposed to contagion, are yet not affected with the disease: and those children who live upon unwholesome watery food, or breathe unwholesome air, are most liable to its attacks, and suffer most from them. In general it has been concluded, that whatever weakens the solids, or tends to bring on a dissolution of the fluids, predisposes to this disease.

Prognosis. The chincough is not very often fatal. During one epidemic, however, it is often observed to be much more dangerous and more severe than during another. This is also remarked with regard even to particular periods of the same epidemic; and it is also observed, that on certain families this disease is much more severe than on others. Its danger, however, is still more connected with the period of life at which it occurs. In children under two years of age it is most dangerous; and kills them by producing convulsions, suffocation, inflammation and suppuration of the brain or in the lungs, ruptures, and incurvation of the spine. In pregnant women it will produce abortion; and in adults inflammations of the lungs, and all the consequences of pneumonia, more frequently than in children. From a long continuance of the disease patients will become asthmatic, ricketty, and scrofulous. It is generally reckoned a good sign when a fit terminates by vomiting; for in this disease there seems to be a great increase of the secretion of mucus, and the vomiting affords great relief.

Cure. Pertussis is one of those diseases which af-

VOL. XI. Part I.

ter the contagion has exerted its influence can be terminated only by running a certain course: but it is much less limited in its course than small-pox and measles, and often it runs on to a very great length, or at least it is very difficult to distinguish certain sequelæ of this disease from the disease itself. And when it exists in the former of these states, it admits of an artificial termination. In the treatment of this affection, therefore, the objects at which a practitioner chiefly aims, are, in the first place, the obviating urgent symptoms, and forwarding the natural termination of the disease; and secondly, the inducing an artificial termination. With these intentions various practices are employed on different occasions. The most approved remedies are vomits, purges, bleeding, and the attenuating pectorals; for the other kinds generally do hurt: but large evacuations of any kind are pernicious. In the Medical Observations, Vol. III. Dr Morris recommends castor and the bark; but in cases attended with any degree of inflammation, the latter must certainly do hurt, and the former will generally be insignificant. Dr Butter, in a dissertation expressly on the subject, relates 20 cases of it cured by the extract of hemlock. He directs half a grain a-day for a child under six months old; one grain for a child from six months to two years; afterwards allowing half a grain for every year of the patient's age till he be 20: beyond that period, he directs ten grains to be given for the first day's consumption, gradually increasing the dose according to the effect. If the patient have not two stools a-day, he advises magnesia or the *lixivia vitriolata sulphurea* to be added to the hemlock mixture. By this method he says the peculiar symptoms of the disease are removed in the space of a week; nothing but a slight cough remaining. The use of hemlock, however, has by no means become universal in consequence of this publication, nor indeed has this remedy been found equally successful with others who have given it a fair trial. The remedy most to be depended upon in this disease is change of air. The patient, as soon as the disease is fully formed, ought to be removed to some other part of the country: but there is no occasion for going to a distant place; a mile or two, or frequently a smaller distance, will be sufficient; and in this new habitation, the frequency of the cough is almost instantly diminished to a most surprising degree. After remaining there for some time, however, the cough will often be observed to become again more frequent, and the other symptoms increased. In this case, another change of air, or even a return to the former habitation, becomes necessary. Manifest benefit has even been derived by changing a patient from one room of a house to another. But although change of air has thus been advantageous, it must also be remarked, that when it has been had recourse to at very early periods it has often done mischief, particularly by aggravating the febrile and inflammatory symptoms. If the disease be attended with fever, bleeding and other antiphlogistic remedies are proper. Dr Buchan recommends an ointment made of equal parts of garlic and hog's lard applied to the soles of the feet; but if it have any effect, it is probably merely as an *emplastrum calidum*. It ought to be put on a rag and applied like a plaster. Opiates may sometimes

Pertussis.

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Spasmi

be useful, but in general are to be avoided. They are chiefly serviceable where the cough is very frequent, with little expectoration. In these cases benefit has sometimes also been derived from vitriolic ether, and sometimes from the tincture of cantharides. An almost instantaneous termination has on some occasions been put to this disease by exciting a high degree of fear, or by inducing another febrile contagion: But the effects of both are too uncertain and too dangerous to be employed in practice.

300

GENUS LVIII. PYROSIS.

The HEART-BURN.

Pyrosis, *Sauv.* gen. 200. *Sag.* 158.

Soda, *Lin.* 47. *Vog.* 154.

Scotis, the WATER-BRASH.

Pyrosis Suecica, *Sauv.* sp. 4.

Cardialgia sputatoria, *Sauv.* sp. 5.

This disease, whether considered as primary or symptomatic, has already been fully treated under DYSPEPSIA.

301

GENUS LIX. COLICA.

The COLIC.

Colica, *Sauv.* gen. 204. *Lin.* 50. *Vog.* 160. *Sag.* 162. *Junck.* 106.

Colica spasmodica et flatulenta, *Hoffm.* II. 284.

Rachialgia, *Sauv.* gen. 211. *Sag.* 168.

Ileus, *Sauv.* gen. 252. *Vog.* 162. *Sag.* gen. 187.

Iliaca, *Lin.* 185.

Dolor et spasmus iliacus, *Hoffm.* II. 263.

Passio iliaca, *Junck.* 107.

Sp. I. The Spasmodic COLIC.

302

Colica flatulenta, pituitosa, &c. *Sauv.* sp. 1. 2. 5.

6. 7. Ileus phlyodes, volvulus, inflammatorius, &c. *Ejusd.* sp. 1. 3. 5. 7. 8. 9.

Description. The colic is chiefly known by a violent pain in the abdomen, commonly about the umbilical region. The pain resembles various kinds of sensations, as of burning, twisting, boring, a ligature drawn very tight, &c. The belly is generally costive, though sometimes there is a violent evacuation of bilious matters upwards and downwards. In these cases the disease is sometimes accompanied from the beginning with a weak and intermitting pulse, cold sweats, and fainting. In some the disease comes on gradually, beginning with an habitual costiveness; and if purgatives be taken, they do not operate. The pain comes on generally after a meal, and soon occasions nausea and vomiting. Sometimes the disease is attended with pyrexia, violent thirst, and a full pulse; the vomiting becomes more violent, and excrementitious matters are thrown up with the most exquisite pain and tension of the abdomen; an hiccup comes on, which continues obstinately; till at last a cessation of pain and fetid breath indicate a mortification of the intestines and approaching death. Sometimes the peristaltic motion of the intestines is so totally inverted, that all their contents are evacuated by the mouth, and even clysters will be vomited; which constitutes that disease commonly called the *iliac passion*.

Causes, &c. Colics may arise from any sudden check given to perspiration, as by violent cold applied to any part of the body, especially to the lower extremities and abdomen. Very frequently they are occasioned by austere, acid, or indigestible aliments taken into the stomach. By any of these, a violent colic, or indeed an iliac passion, may be occasioned; for Dr Cullen justly observes, that this last, though commonly accounted a different species of disease, differs from a colic in no other way than in being in every respect in a much higher degree. In those who have died of this disease and been dissected, the intestines have sometimes been found twisted; but more commonly there hath been an *introsusception* of the intestine, that is, one part of the gut seems to have entered within the other. In the *Edinburgh Medical Essays*, Vol. III. we have a dissertation on the use of the warm bath in the bilious colic, in which the author derives the disorder from a spasmodic constriction of the intestine occasioned by the acrimony of the bile. By this, he says, the intestine is not only contracted into an unusual narrowness, but coats of it have been found, upon dissection, so closely joined, that no passage could be made downwards more than if they had been strongly tied by a ligature. The formation of the *introsusceptio* he explains by quoting a passage from Peyerus, who made the following experiment on a frog. Having irritated the intestine of the animal in several different places, he observed it to contract at those places most violently, and to protrude its contents upwards and downwards wherever the relaxed state of the part would permit; by which means the contents were heaped together in different parts. Hence some parts of the intestine being dilated much more than enough, by reason of the great quantity of matter thrown into them, formed a kind of sack which readily received the constricted part into it. If this happen in the human body, there is the greatest danger of a mortification; because the part which is constricted, and at any rate disposed to inflammation, has that disposition very much increased by its confinement within the other, and by the pressure of the contents of the alimentary canal from the stomach downwards upon it. An iliac passion may also arise from the strangulation of part of the intestine in a hernia; and even a very small portion of it thus strangulated may occasion a fatal disease. In the *Medical Observations*, Vol. IV. however, we have an account of an iliac passion arising from a very different cause, which could neither have been suspected nor cured by any other way than the operation of *gastrotomy*, or opening the abdomen of the patient, in order to remove the cause of the disorder. The patient, a woman of about 28 years of age, died after suffering extreme torture for six days. The body being opened, some quantity of a dirty coloured fluid was found in the cavity of the abdomen. The jejunum and ileum were greatly distended with air. A portion of the omentum adhered to the mesentery, near that part where the ileum terminates in the caecum. From this adhesion, which was close to the spine, there ran a ligamentous cord or process about two inches and a half long, unequally thick, in some places not thicker than a packthread; which by its other extremity adhered to the coats of the ileum, about two inches

Colica.

Spasmi inches above the cæcum. This cord formed a circle with the mesentery, large enough to admit a hen's egg to pass through it. The chord had formed a noose (in a manner difficult to be explained), which included a doubling of about two inches of the lower end of the ileum; and was drawn so tight, that it not only put a stop to the passage of every thing through the bowels, and brought on a gangrene of the strangulated part, but it had even cut through all the coats of the intestine on the opposite side to the mesentery, and made an aperture about an inch long. In the Memoirs of the Academy of Surgery are mentioned several similar cases.

Prognosis. The colic is never to be reckoned void of danger, as it may unexpectedly terminate in an inflammation and gangrene of the intestines. Those species of it which are attended with purging must be considered as much less dangerous than those in which the vomiting is very violent. The iliac passion, or that attended with the vomiting of feces, is always to be accounted highly dangerous; but if the passage through the intestines be free, even though their peristaltic motion should be inverted, and clysters evacuated by the mouth, there is much more hope of a cure, than when the belly is obstinately costive, and there is some fixed obstruction which seems to bid defiance to all remedies.

Cure. In the cure of the spasmodic colic, the recovery must ultimately depend on producing a resolution of the spasmodic affection. In order to accomplish this, it is in general necessary to evacuate the contents of the intestines, and to remove morbid irritability existing in that part of the system. But in order to preserve the life of the patient from the most imminent hazard, it is still more necessary to prevent and remove those inflammatory affections which often occur in this disease. As the chief danger in colics arises from an inflammation and consequent mortification of the intestines, it is essentially necessary, in the first place, to diminish the tendency to a pyrexia, if there should happen to be any. This is accomplished by bleeding, emollient injections, warm bathing, and cooling medicines taken inwardly. Dr Porter, in the essay abovementioned, strongly recommends the warm bath in those colics attended with violent evacuations of bile. He supposes it to do service by relaxing the constriction of the intestines, and thus preventing or removing the intussusception. In the mean time opiates may be given to ease the pain, while every method is tried, by cathartics and glysters of various kinds, to procure a stool. In obstinate cases, where stimulating cathartics have proved ineffectual, the milder kinds, such as manna, fenna, oleum ricini, &c. will succeed; but where every thing of this kind fails, recourse must be had to some of the more extraordinary methods. Some have recommended the swallowing of leaden bullets, on a supposition that by their weight they would force through the obstruction into the gut; but these seem much more likely to create than to remove an obstruction. It is impossible they can act by their gravity, because the intestines do not lie in a straight line from the pylorus to the anus; and though this were actually the case, we cannot suppose that the weight of a leaden bullet could prove very efficacious in removing either a spasmodic constriction or an obstruction from any

other cause. But when we consider, not only that the intestines consist of a great multitude of folds, but that their peristaltic motion (by which only the contents are forced through them) is inverted, the futility of this remedy must be evident. It might rather be supposed to aggravate the disease; as the lead, by its pressure, would tend to fix the intussusception more firmly, or perhaps push it still further on. The same thing may be said of quicksilver: not to mention the pernicious consequences to be apprehended from swallowing large quantities of this mineral, even if it should prove efficacious in relieving the patient for the present. There are, however, some late cases on record, particularly one by Mr William Perry, published in the sixteenth volume of the Edinburgh Medical Commentaries, in which the hydrargyrus, swallowed in great quantities, was attended with the happiest effects, after every other remedy had been tried in vain. Another method has been proposed, in the Medical Essays, for relieving the miserable patients in this disorder, which in many cases has been known to do service. The patient is to be taken out of bed, and made to walk about on the cold floor of a damp apartment. At the same time, porringers of cold water are to be dashed on his feet, legs, and thighs; and this must be continued for an hour or longer, if a stool be not procured before that time, though this will generally be the case much sooner. The exercise does not at all impair the patient's strength, but rather adds to it; and some very remarkable instances are adduced in the 6th volume of the Medical Essays, where this proved effectual after all other medicines had failed. In one person the disease had come on with an habitual costiveness, and he had been for a week tormented with the most violent pain and vomiting, which could be stopped neither by anodynes nor any other medicines, the sharpest clysters being returned unaltered, and all kinds of purgatives thrown up soon after they were swallowed; but by the abovementioned method, a stool was procured in 35 minutes, and the patient recovered. In some others the costiveness had continued for a much longer time.—Other remedies are, the blowing air into the intestines by means of a bellows, and the injecting clysters of the smoke of tobacco. But neither of these seem very capable of removing the disease. They can affect only the parts below the obstruction; while, to cure the disease, it is necessary that the obstructed parts themselves should be reached by the medicine, and therefore we have not many well-attested instances of their success. In some obstinate cases, however, benefit has certainly been derived from tobacco-smoke injections, and likewise from injections of tepid water to the extent of several pounds. For putting in practice these modes of cure, a particular apparatus have been contrived; and in cases even apparently desperate, neither should be neglected. The cold water gives a general and very considerable shock to the system, checks the perspiration, and thus drives the humours inward upon the intestines, by which they receive a much more effectual stimulus than can be supposed to arise from any kind of clyster. But when all methods have failed, the only chance the patient can have for life is by a manual operation.

In those colics which are attended with faintings,

Spasmi

&c. from the beginning, and which generally attack hysteric women and other debilitated persons, all kinds of evacuations are pernicious; and the cure is to be attempted by anodynes and cordials, which will seldom fail of success. Even there also, however, it is necessary that the belly should be moved; and for this purpose injections, containing a solution of asafœtida, which operate powerfully as antispasmodics, are preferable to most other modes of cure.

303

Sp. II. COLICA PICTONUM. *The Colic of Poitou.*

Rachialgia Pictorum, *Sauv.* sp. 1.

Rachialgia metallica, *Sauv.* sp. 3.

Colica Pictorum *Citæsi et succedentium auctorum.*

ANOTHER cause to which violent colics are frequently to be ascribed, and which often gives occasion to them where it is very little suspected, is lead, or some solution or fume of it, received into the body. To this cause is evidently owing the colics to which plumbers, lead-miners, and smelters of lead, are subject. To the same cause, though not so apparent at first sight, are we to ascribe the Devonshire colic, where lead is received into the body dissolved in cyder, the common drink of the inhabitants of that country. This has been proved by experiment; for lead has been extracted from cyder in quantity sufficient to produce pernicious effects on the human body. The colic of Poitou, and what is called the *dry belly-ache* in the West Indies, are of the same nature; for which reason we give the following general description of the symptoms of all these diseases.

The patient is generally first seized with an acute pain at the pit of the stomach, which extends itself down with griping pains to the bowels. Soon after there is a distension, as with wind; and frequent reachings to vomit, without bringing up any thing but small quantities of bile and phlegm. An obstinate costiveness follows, yet sometimes attended with a tenesmus, and the bowels seem to the patient as if they were drawn up towards the back; at other times they are drawn into hard lumps, or hard rolls, which are plainly perceptible to the hand on the belly, by strong convulsive spasms. Sometimes the coats of the intestines seem to be drawn up from the anus and down from the pylorus towards the navel. When a stool is procured by artificial means, as clysters, &c. the feces appear in little hard knots like sheep's dung, called *scybalæ*, and are in small quantity. There is, however, usually an obstinate costiveness; the urine is discharged in small quantity, frequently with pain and much difficulty. The pulse is generally low, though sometimes a little quickened by the violence of the pain; but inflammatory symptoms very seldom occur. The extremities are often cold, and sometimes the violence of the pain causes cold clammy sweats and fainting. The mind is generally much affected, and the spirits are sunk. The disease is often tedious, especially if improperly treated, insomuch that the patients will continue in this miserable state for twenty or thirty days successively; nay, instances have been known of its continuing for six months. In this case the pains at last become almost intolerable: the patient's breath acquires a strong fetid smell like excrements, from a retention of the feces, and an absorp-

tion of the putrid effluvia from them by the lacteals. At last, when the pain in the bowels begins to abate, a pain comes on in the shoulder-joints and adjoining muscles, with an unusual sensation and tingling along the spinal marrow. This soon extends itself from thence to the nerves of the arms and legs, which become weak; and that weakness increases till the extreme parts become paralytic, with a total loss of motion, though a benumbed sensation often remains. Sometimes, by a sudden metastasis, the brain becomes affected, a stupor and delirium come on, and the nervous system is irritated to such a degree as to produce general convulsions, which are frequently followed by death. At other times, the peristaltic motion of the intestines is inverted, and a true iliac passion is produced, which also proves fatal in a short time. Sometimes the paralytic affection of the extremities goes off, and the pain of the bowels returns with its former violence; and on the cessation of the pain in the intestines, the extremities again become paralytic and thus the pain and palsy will alternate for a very long time.

Cure. Various methods have been attempted for removing this terrible disease. The obstinate costiveness which attends it, made physicians at first exhibit very strong purgatives and stimulating clysters. But these medicines, by increasing the convulsive spasms of the intestines, were found to be pernicious. Balsam of Peru, by its warm aromatic power, was found to succeed much better; and Dr Sydenham accordingly prescribed it in the quantity of 40 drops twice or thrice a day taken on sugar. This, with gentle purgatives, opiates, and some drops of the hotter essential oils, continued to be the medicine commonly employed in this disease, till a specific was published by Dr Lionel Chalmers of South Carolina. This receipt was purchased by Dr Chalmers from a family where it had long been kept a secret. The only unusual medicine in this receipt, and on which the efficacy of it chiefly if not wholly depends, is vitriolated copper. This must be dissolved in water, in the quantity of one grain to an ounce, and the dose of the solution is a wine-glassful given fasting for nine successive mornings. For the first four or five days this medicine discharges much æruginous bile both ways: but the excretions of this humour lessen by degrees; and before the course be ended, it has little other effect than to cause some degree of squeamishness, or promote a few bilious stools, or perhaps may not move the patient at all. At the time of using this medicine the patients should live upon broth made of lean meat, gruel, or panada: but about the seventh or eighth day, they may be allowed bread and boiled chicken. Here the copper seems to do service by its tonic power; and for the same reason, alum, recommended by Dr Percival, most probably cures the disease. He says he has found this very efficacious in obstinate affections of the bowels, and that it generally proves a cure in the slighter cases of the colica pictorum. It was given to the quantity of fifteen grains every fourth, fifth, or sixth hour; and the third dose seldom failed to mitigate the pain, and sometimes entirely removed it. Among purgative medicines, the *oleum Ricini* is found to be the most efficacious.

Colica.

Sp. III.

Spasmi

Sp. III. The COLIC from *Costiveness*.

304

Colica stercorea, *Sauv.* sp. 3.Ileus a fœcibus induratis, *Sauv.* sp. 2.

For the treatment of this species, see above.

Sp. IV. The *Accidental COLIC*.Colica Japonica,—accidentalis,—lactentium,—a veneno, *Sauv.* sp. 10. 14. 18. 20.Cholera sicca auriginosa a fungis venenatis, *ejusd.* sp. 2.

When colics arise from acrid poisonous matter taken into the stomach, the only cure is either to evacuate the poison itself by vomiting, or to swallow some other substance which may decompose it, and thus render it inactive. The most common and dangerous substances of this kind are corrosive mercury and arsenic. The former is easily decomposed by alkaline salts; and therefore a solution of lixivial salt, if swallowed before the poison has time to induce a mortification of the bowels, will prove a certain cure. Much more uncertain, however, is the case when arsenic is swallowed, because there is no certain and speedy solvent of that substance yet known. Milk has been recommended as efficacious; and lately a solution of *hepar sulphuris*. The latter may possibly do service; as arsenic unites readily with sulphur, and has its pernicious qualities more obtunded by that than by any other known substance: but indeed, even the solvent powers of this medicine are so weak, that its effects as well as those of others must be very uncertain.

Some kinds of fungi, when swallowed, are apt to produce colics attended with stupor, delirium, and convulsions; and the same sometimes happens from eating a large quantity of the shell-fish known by the name of muscles (the *MYTULUS*). Some of the fungi, doubtless, may have an inherent poisonous quality; but generally they as well as the muscles act on a different principle. Their pernicious effects happen most commonly when they are taken on an empty stomach; and are then supposed to be occasioned by their adhering so close to its coats, that it cannot exert its powers, and the whole system is thrown into the utmost disorder. The malady may therefore be very easily prevented; but when once it has taken place, it cannot be removed till either a vomiting be excited, or the stomach has recovered itself in such a manner as to throw off the adhering matter.

305

Sp. V. COLIC of *New-born Infants* from a *Retention* of the *Meconium*. (*Sauv.* sp. 19.)

This disorder would be prevented were children allowed immediately to suck their mothers, whose milk at first is purgative. But as this is not commonly done, the child is frequently troubled with colics. These, however, may be removed by a few grains of ipecacuanha, or a drop or two of antimonial wine. By these means the stomach is cleansed by vomiting, and the belly is generally loosened; but if this last effect does not happen, some gentle purge will be necessary.

306

Sp. VI. COLIC from a *Callosity* of the *Colon*.

It is in a manner impossible to discover this distem-

per before the patient's death; and though it should, it does not admit of a cure.

Colica.

Sp. VII. The COLIC from *Intestinal Calculi*. (*Sauv.* sp. 10. 15.)

307

When certain indigestible bodies, such as cherry-stones, plum-stones, small pieces of bones, &c. are swallowed, they frequently prove the basis of calculi, formed by an accretion of some kind of earthy matter; and being detained in some of the flexures of the intestines, often occasion very violent colics. These calculi do not discover themselves by any peculiar symptoms, nor do they admit of any particular method of cure. In the Medical Essays we have an instance of colics for six years, occasioned by calculi of this kind. The concretions were at last passed by stool; and their passage was procured by causing the patient drink a large quantity of warm water, with a view to promote the evacuation of bile, a redundancy of which was supposed to be the cause of her disorder.

GENUS LX. CHOLERA, the CHOLERA MORBUS.

308

Cholera, *Sauv.* 253. *Lin.* 186. *Vog.* 110. *Sag.* 188. *Hoffm.* II. 165.Diarrhœa cholericæ, *Junc.* 112.Sp. I. The *Spontaneous CHOLERA*, coming on without any manifest cause.

309

Cholera spontanea, *Sauv.* sp. 1. *Sydenb.* sect. iv. cap. 2.Cholera Indica, *Sauv.* sp. 7.Sp. II. The *Accidental CHOLERA*, from acrid matters taken inwardly.

310

Cholera crapulosa, *Sauv.* sp. 11.Cholera a venenis, *Sauv.* sp. 4. 5.

THE cholera shows itself by excessive vomiting and purging of bilious matters, with violent pain, inflation and distension of the belly. Sometimes the patients fall into universal convulsions; and sometimes they are affected with violent spasms in particular parts of the body. There is a great thirst, a small and unequal pulse, cold sweats, fainting, coldness of the extremities, and hiccough; and death frequently ensues in 24 hours.

In this disease, as a larger quantity of bile is deposited in the alimentary canal, particularly in the stomach, the first object is to counteract its influence, and to promote an easy discharge of it. It is next necessary to restrain that increased secretion of bile, by which a fresh deposition in the alimentary canal would otherwise be soon produced. And, in the last place, measures must often be employed to restore a sound condition to the alimentary canal, which is frequently much weakened by the violence of the disease.

On these grounds, the cure of this distemper is effected by giving the patient a large quantity of warm water, or very weak broth, in order to cleanse the stomach of the irritating matter which occasions the disease, and injecting the same by way of clyster, till the pains begin to abate a little. After this, a large dose of laudanum is to be given in some convenient vehicle,

Spasmi

vehicle, and repeated as there is occasion. But if the vomiting and purging have continued for a long time before the physician be called, immediate recourse must be had to the laudanum, because the patient will be too much exhausted to bear any further evacuations. Sometimes the propensity to vomit is so strong, that nothing will be retained, and the laudanum itself thrown up as soon as swallowed. To settle the stomach in these cases, Dr Douglas, in the Medical Essays, recommends a decoction of oat-bread toasted as brown as coffee; and the decoction itself ought to be of the colour of weak coffee. He says he does not remember that this decoction was ever vomited by any of his patients. An infusion of mint-leaves or good simple mint-water is also said to be very efficacious in the same case.

The tincture of opium is sometimes retained when given in conjunction with a portion of the vitriolic acid properly diluted. But when it cannot be retained in a fluid form by the aid of any addition, it will sometimes sit upon the stomach when taken in a solid state.

After the violence of the disease is overcome, the alimentary canal, and the stomach in particular, requires to be braced and strengthened. With this view recourse is often had with advantage to different vegetable bitters, particularly to the use of the Colombo root; which, while it strengthens the stomach, is also observed to have a remarkable tendency in allaying a disposition to vomiting, which often remains for a considerable time after the cholera may be said to be overcome.

311

GENUS LXI. DIARRHOEA.

LOOSENESS.

Diarrhoea, *Sauv.* gen. 253. *Lin.* 187. *Vog.* 105.

Sag. gen. 189. *Junch.* 112.

Hepaticorrhoea, *Sauv.* gen. 246.

Choleric, *Lin.* 190.

Cœliaca, *Sauv.* gen. 255. *Lin.* 189. *Vog.* 109. *Sag.* gen. 199.

Lienteria, *Sauv.* gen. 256. *Lin.* 188. *Sag.* gen. 191. *Vog.* 108.

Pituitaria, & leucorrhœis, *Vog.* 111. 112.

312

Sp. I. The *Feculent* DIARRHOEA.

Diarrhoea stercorosa & vulgaris, *Sauv.* sp. 1. 2.

THIS is occasioned by the too great quantity of matter thrown into the alimentary canal; and what is discharged has not the appearance of excrements, but is much whiter, and of a thinner consistence. Voracious people who do not sufficiently chew their food, gormandizers, and even those who stammer in their speech, are said to be liable to this disease. In slighter cases it is removed without any medicine, or by a dose of rhubarb; but where the matters have acquired a putrid taint, the disorder may be exceedingly protracted and become dangerous. In this case lenient and antiseptic purgatives are to be made use of, after which the cure is to be completed by astringents.

313

Sp. II. The *Bilious* DIARRHOEA.
(*Sauv.* sp. 8.)

This distemper shows itself by copious stools of a very yellow colour, attended with gripes and heat of

the bowels, thirst, bitterness, and dryness of the mouth, yellowness of the tongue, and frequently follows an intermitting or bilious fever. When the fever is gone, the diarrhoea is to be removed by acidulated and cooling drinks, with small doses of nitre.

Diarrhoea.

Sp. III. The *Mucous* DIARRHOEA.

314

Diarrhoea lactentium, *Sauv.* sp. 19.

Dysenteria Parisiaca, *Sauv.* sp. 3.

Diarrhoea ab hypercatharsi, *Sauv.* sp. 16.

Dysenteria a catharticiis, *Sauv.* sp. 12.

Pituitaria, *Vog.* 111.

Leucorrhœis, *Vog.* 112.

Diarrhoea pituitosa, *Sauv.* sp. 4.

Cœliaca mucosa, *Sauv.* sp. 3.

Diarrhoea serosa, *Sauv.* sp. 10.

a. Diarrhoea urinosa.

This kind of diarrhoea, besides the matters usually excreted, is attended with a copious dejection of the mucus of the intestines with great pain; while the patient daily pines away, but without any fever.—Persons of all ages are liable to it, and it comes on usually in the winter-time; but is so obstinate, that it will sometimes continue for years. In obstinate loosenesses of this kind, vomits frequently repeated are of the greatest service. It is also very beneficial to keep the body warm, and rub the belly with stimulating ointments; at the same time that astringent clysters, rhubarb, and stomachic medicines, are to be exhibited. Starch clysters are very often efficacious.—Some kinds of looseness are contagious; and Sir John Pringle mentions a soldier who laboured under an obstinate diarrhoea, who infected all those that used the same privy with himself. In the looseness which frequently followed a dysentery, the same author tells us that he began the cure with giving a vomit of ipecacuanha, after which he put the patients on a course of astringents. He used a mixture of three drachms of extract of logwood, dissolved in an ounce and a half of spirit of cinnamon, to which was added seven ounces of common water, and two drachms of tincture of catechu. Of this the patient took two spoonfuls once in four or five hours, and sometimes also an opiate at bed-time. He recommends the same medicine in obstinate diarrhoeas of all kinds. A decoction of simarauba bark was also found effectual, when the dysenteric symptoms had gone off. Dr Huck, who used this article in North-America, also recommends it in diarrhoeas. Two or three ounces of the simarauba are to be boiled in a pound and a half of water to a pound, and the whole quantity taken throughout the day. He began with the weakest decoction; and, when the stomach of the patient could easily bear it, he then ordered the strongest: but at the same time he acknowledges, that, unless the sick found themselves sensibly better within three days from the time they began the medicine, they seldom afterwards received any benefit from it. But when all astringents have failed, Sir John Pringle informs us, he hath known a cure effected by a milk and farinaceous diet; and he thinks in all cases the disorder would be much more easily removed, if the patients could be prevailed on to abstain entirely from spirituous liquors and animal-food. If the milk by itself should

Spasmi turn four on the stomach, a third part of lime-water may be added. In one case he found a patient receive more benefit from good butter-milk than from sweet-milk. The chief drinks are decoctions of barley, rice, calcined hartshorn, toast and water, or milk and water.

315

Sp. IV. The COELIAC PASSION.

Cœlica chylosa, *Sauv.* sp. 1.Cœlica lactea, *Sauv.* sp. 4.

There are very great differences among physicians concerning the nature of this disease. Sauvages says, from Aretæus, it is a chronic flux, in which the aliment is discharged half digested. It is attended with great pains of the stomach, resembling the pricking of pins; rumbling and flatus in the intestines; white stools, because deprived of bile, while the patient becomes weak and lean. The disease is tedious, periodical, and difficult to be cured. Sauvages adds, that none of the moderns seem to have observed the disease properly; that the excrements indeed are white, on account of a deficiency of the bile, but the belly is bound as in the jaundice. Dr Cullen says there is a dejection of a milky liquid of the nature of chyle; but this is treated by Vogel as a vulgar error. He accuses the moderns of copying from Aretæus, who mentions white fæces as a symptom of the distemper; from whence authors have readily fallen into the notion that they never appeared of any other colour in persons labouring under the cœliac passion. This error quickly produced another, which has been very generally received; namely, that the chyle was thrown out of the lacteals by reason of some obstruction there, and thus passed along with the excrements; of which he says there is not the least proof, and agrees with Aretæus that the whiteness is only occasioned by the want of bile. He endeavours to prove at length, that the cœliac passion can neither be occasioned by an obstruction of the lacteals, nor of the mesenteric glands; though he owns that such as have died of this disease and were dissected, had obstructions in the mesenteric glands; but he denies that all those in whom such obstructions occur, are subject to the cœliac passion. He considers the distemper as arising from a cachexy of the stomachic and intestinal juices; and directs the cure to be attempted by emetics, purgatives, antiseptics, and tonics, as in other species of diarrhœa.

316

Sp. V. The LIENTERY.

Lienteria spontanea, *Sauv.* sp. 2.

The lientery, according to Sauvages, differs from the cœliac passion only in being a slighter species of the disease. The aliment passes very quickly through the intestines, with scarce any alteration. The patients do not complain of pain, but are sometimes affected with an intolerable hunger. The cure is to be attempted by stomachics and tonics, especially the Peruvian bark. This disease is most common at the earlier periods of life; and then rhubarb in small quantities, particularly when combined with magnesia, is often productive of the best effects.

Sp. VI. The Hepatic FLUX.
Hepaticorrhœa intestinalis, *Sauv.* sp. 2.

Diarrhœa.

317

The hepatic diarrhœa is by Sauvages described as a flux of bloody ferous matter like the washings of flesh, which percolates through the coats of the intestines by means of the anastomosing vessels. It is the cœliac passion of Trallianus; and which, according to Sauvages, rarely, if ever, occurs as a primary disease. It has, however, been observed to follow an inflammation of the liver, and then almost always proves fatal.

GENUS LXII. DIABETES.

A profuse Discharge of URINE.

318

Diabetes, *Sauv.* gen. 263. *Lin.* 197. *Vog.* 115. *Sag.* gen. 199. *Junck.* 99. *Dobson*, Med. Observat. Vol. V. p. 298. *Home's Clinical Experiments*, sect. xvi. *Diuresis*, *Vog.* 114.

Sp. I. The DIABETES with sweet Urine.

319

Diabetes Anglicus, *Sauv.* sp. 2. *Mead* on Poisons, Essay I. Ejusdem Monita Med. cap. ix. sect. 2. *Dobson* in Lond. Med. Observ. Vol. V. art. 27. *Myers* Diss. inaug. de Diabete, Edinb. 1779. Diabetes febricofus, *Sauv.* sp. 7. *Sydenh.* Ep. resp. ad R. Brady.

Sp. II. DIABETES with insipid Urine.

320

M. Lister Exerc. Medicin. II. de Diabete. Diabetes legitimus, *Sauv.* sp. 1. *Aretæus* de Morb. diuturn. lib. ii. cap. 2. Diabetes ex vino, *Sauv.* sp. 5. *Ephem. Germ.* D. I. A. II. Observ. 122.

Description. The diabetes first shows itself by a dryness of the mouth and thirst, white frothy spittle, and the urine in somewhat larger quantity than usual. A heat begins to be perceived in the bowels, which at first is a little pungent, and gradually increases. The thirst continues to augment by degrees, and the patient gradually loses the power of retaining his urine for any length of time. It is remarkable, that though the patients drink much, the quantity of urine always exceeds what is drank. In Dr Home's Clinical Experiments we have an account of two patients labouring under this disease: one of them drank between 10 and 12 English pints a-day without being satisfied. The quantity was greater in the forenoon than in the afternoon. In the other the case was reversed. He drank about four pints a-day, and more in the afternoon than the forenoon. The former passed from 12 to 15 pints of urine in the day: the latter, 11 or 12; so that his urine always exceeded his drink by eight, or at least seven pints. When the urine is retained a little while, there is a swelling of the loins, ilia, and testes; in this disease the strength gradually decays; the skin is dry and shrivelled; œdematous swellings arise in various parts of the body, but afterwards subside without relieving the disease in the least; and the patient is frequently carried off by convulsions.

The most singular phenomenon in this disease is, that the urine seems to be entirely or very much distilled.

Spasmi

vested of an animal-nature, and to be largely impregnated with a saccharine salt scarce distinguishable from that obtained from the sugar-cane. This discovery was first made by Dr Dobson of Liverpool, who made some experiments on the urine of a person labouring under a diabetes, who discharged 28 pints of urine every day, taking during the same time from 12 to 14 pounds of solid and liquid food. Some of this urine being set a-side, fell into a spontaneous effervescence, changed first into a vinous liquor, and afterwards into an acetous one, before it became putrid and offensive. Eight ounces of blood taken from the same patient, separated into crassamentum and serum; the latter being sweet to the taste, but less so than the urine. Two quarts of the urine, evaporated to dryness, left a white cake weighing four ounces two drachms and two scruples. This cake was granulated, and broke easily between the fingers: it smelled sweet like brown sugar; neither could it by the taste be distinguished from sugar, except that it left a slight sense of coolness on the tongue. The experiment was repeated after the patient was recovered to such a degree as to pass only 14 pints of urine a-day. There was now a strong urinous smell during the evaporation; and the residuum could not be procured in a solid form, but was blackish, and much resembled very thick treacle. In Dr Home's patients, the serum of the blood had no preternatural sweetness; in one of them the crassamentum was covered with a thick inflammatory crust. In one of these patients the urine yielded an ounce and a half, and in the other an ounce, of saccharine matter from each pound. It had, however, an urinous smell, and a saline taste mixed with the sweet one; and the urine of one fermented with yeast, we are told, into "tolerable small-beer." Both these patients had a voracious appetite, and perpetual gnawing sense of hunger; as had also Dr Dobson's patient. The insipid urine of those affected with diabetes has not been examined by physicians with sufficient accuracy to enable us to speak with confidence of its contents.

Causes. These are exceedingly obscure and uncertain; spasms of the nervous system, debility, and every thing inducing it, but especially strong diuretics and immoderate venery, have been accused as bringing on the diabetes. It has, however, occurred in persons where none of all these causes could be suspected; nor have the best physicians been able to determine it. — Dissections have only shown that the kidneys were in an enlarged and lax state. In one of Dr Home's patients who died, they smelled sour; which showed that the urine peculiar to diabetes came from the kidneys, and was not sent directly from the intestines by a retrograde motion of the lymphatics, as some imagine.

Prognosis. The diabetes is rarely cured, unless when taken at the very beginning, which is seldom done; and in a confirmed diabetes the prognosis must therefore be unfavourable.

Cure. As there is reason to believe that in this affection the morbid secretion of urine, which is both preternatural in point of quantity and of quality, arises from a morbid diminution of tone in the kidney, the great object in the cure must be the restoration of due tone to the secreting vessels of the kidney. But as

Nº 207.

even this diminished tone would not give rise to the peculiar vitiated secretion without a morbid sensibility of that organ, it is necessarily a second object to remove this morbid sensibility. But besides this, the morbid secretion of urine may also be counteracted both by a diminution of the determination of fluids to the kidney, and by preventing the occurrence of superfluous water in the general mass of blood.

On these grounds the principal hopes of a cure in this distemper are from astringent and strengthening medicines. Dr Dobson's patient was relieved by the following remedies; which, however, were frequently varied, as none of them produced their good effects for any length of time: The bark in substance, with small doses of rhubarb; decoction of the bark, with the acid elixir of vitriol; the cold infusion of the bark, of which he drank from a quart to two quarts daily; Dover's powder; alum-whey; lime-water; antimonials combined with *tinctura Thebaica*. The warm bath was used occasionally when the skin was remarkably hot and dry, and the patient complained of restlessness and anxiety. The tincture of cantharides was likewise tried; but he could never take more than 25 drops for a dose, without exciting great uneasiness in his bowels. The body was kept constantly open, either with rhubarb or the infusion of senna joined with rhubarb. His common drinks were rice-water, barley-water, lime-water, and milk; lime-water alone; sage, balm, or mint-tea; small-beer, simple water, and water acidulated with the vitriolic acid. In seven months, these remedies, in whatever manner varied, made no further progress in removing the disease. In Dr Home's patients, all these medicines, and many others, were tried without the least good effect; inasmuch that he uses this remarkable expression: "Thus, these two patients have exhausted all that experience had ever recommended, and almost all that theory could suggest; yet, in both cases, the disease has resisted all the means of cure used." It is remarkable, that though septics were given to both, in such quantity as evidently to produce a putrescency in the *primæ viæ*, the urine remained unaltered both in quantity and quality.

But although this disease be frequently in its nature so obstinate as to resist every mode of cure, yet there can be no doubt that particular remedies have succeeded in different cases. Dr Brisbane relates several cases cured by the use of tincture of cantharides: and Dr McCormick has related some in the 9th volume of the Edinburgh Medical Commentaries, which yielded to Dover's powder after a variety of other remedies had been tried in vain.

GENUS LXIII. HYSTERIA.

HYSTERICUS.

321

Hysteria, *Sauv.* gen. 135. *Lin.* 126. *Vog.* 219. *Sag.* gen. 242.

Malum hystericum, *Hoffm.* III. 50. *Junck.* 36.

Affectio hysterica, *Willis* de Morb. Convulsiv. cap. 5. 10. 11. *Sydenham* Diff. Epist. ad G. Cole, *Whytt* on Nervous Disorders.

Description. The hysteria is a convulsive disease, which comes on at uncertain intervals, sometimes longer and sometimes shorter, but at no stated time. The paroxysms commonly begin with a languor and debility

Spasmi

lity of the whole body; yawning, stretching, and restlessness. A sense of coldness also in the extremities, almost always precedes, and for the most part remains during the whole time of, the paroxysm. To this sometimes succeeds a sense of heat; and the two sensations alternate with each other in different parts of the body. The face is sometimes flushed and sometimes pale; and sometimes the paleness and flushing come alternately. There is a violent pain in the head; the eyes become dim, and pour out tears; there is a rumbling and inflation of the intestines; a sensation is felt like that of a globe ascending from the lower part of the abdomen or hypogastrium, which sometimes seems to roll along the whole alimentary canal. It ascends to the stomach, sometimes suddenly, sometimes slowly; and there produces a sense of inflation and weight, together with anxiety, nausea, and vomiting. At last it comes up to the throat, where it produces a sense of suffocation, and difficulty of breathing or swallowing. During this time there are the most violent pains both in the external and internal parts of the abdomen; the muscles are convulsed; the umbilicus is drawn inwards; and there are frequently such spasms of the intestines, that neither clysters can be injected, nor even flatus pass downwards. Sometimes the paroxysm remits after these symptoms have continued for a certain time, but more frequently the patients fall into fainting fits; sometimes they lie without motion, as if they were in a deep sleep; sometimes they beat their breasts violently and continually with their hands, and sometimes they are seized with general convulsions, and the disease puts on the appearance of an epilepsy. In some patients the extremities become cold and stiff, and the body has the appearance of one in a catalepsy. Sometimes a most violent beating pain takes place in some part of the head, as if a nail was driving into it, and all visible objects seem to turn round; grievous pains attack the loins, back, and bladder, and the patients make a surprising quantity of urine as limpid as water; which last is one of the surest signs of the disease. The mind is very much affected as well as the body. Sometimes the patients are tormented with vain fears; sometimes they will laugh, at other times cry immoderately; and sometimes their temper becomes so peevish and fretful, that they cannot enjoy a moment's quiet. The appearances which take place in this affection are indeed so much varied, that they can hardly be enumerated: they may, however, with propriety, be divided into hysteric fits, which very much resemble those of epilepsy, excepting that they are not attended with an abolition of the internal senses; and hysteric symptoms, such as the *globus hystericus*, *clavus hystericus*, and the like, which are chiefly known to constitute a part of this disease from being observed to alternate with fits.

Causes, &c. The general cause of hysteria is thought by the best physicians to consist in a too great mobility and irritability of the nervous system, and of consequence the disease may be brought on by whatever debilitates and renders the body irritable. Hence it most frequently attacks females of a weak and lax habit of body, though there are some instances of men also attacked by it. It generally comes on between the time of puberty and the age of 35, and makes its attacks during the time of menstruation more frequently

VOL. XI. Part I.

than at any other. It also more frequently seizes barren women and young widows, than such as are bearing children.

Prognosis. Though the appearance of this disease be so very terrible, it seldom proves mortal unless by wrong treatment: but notwithstanding this it is extremely difficult of cure, and rarely admits of any thing else than being palliated; for though it should seem to be conquered by medicine for a time, it very quickly returns, and that from the slightest causes.

Cure. The ends principally to be aimed at in the cure of this disease are, in the first place, the removal of particular convulsive or spasmodic affections immediately producing various appearances in the disease, whether under the form of proper hysteric fits, or merely of what may be called hysteric symptoms; and in the second place, the prevention of the return of symptoms after they have been removed, by the employment of proper remedies during those intervals from complaints which patients often have when labouring under this affection.

The most powerful remedy hitherto discovered in hysteric cases is opium, or the tincture of it called *laudanum*. By this commonly the most violent paroxysms are stopped, though it be insufficient to accomplish a radical cure. In Dr Home's Clinical Experiments we find an instance of a cure performed by venesection, though this remedy has been generally condemned in hysterical cases. *Asafœtida* seems to stand next in virtue to opium; though with some it disagrees, and occasions pains in the stomach and vomiting. *Æther* will also frequently remove an hysteric fit: but its effects are of short duration; and if it do not effect a cure soon after its exhibition, no service is to be expected either by perseverance in the use of it or by increasing the dose; and with some constitutions it disagrees to such a degree as to occasion convulsions. If the patient be seized with a violent fit, so that she can swallow nothing, which is frequently the case, it will be proper to apply some strong volatile alkali to her nose; or if that be not at hand, the vapour of burning feathers is sometimes very efficacious. In some instances benefit is derived from the sudden application of cold water to the face or hands; but still more frequently the application of water in a tepid state, particularly the warm pediluvium, is found to be of very great service in bringing about a favourable termination of different violent hysteric symptoms. A plaster of galbanum and *asafœtida* will also prove serviceable: but it must be remembered, that none of these things will prevent the return of the disease; and therefore a radical cure is to be attempted by exercise, the Peruvian bark, chalybeates, mineral waters, and other tonics; but particularly, where the state of the patient is such as to be able to bear it, by the use of the cold bath, which, where it does not disagree with the constitution, is often of the greatest service in preventing returns of this affection.

GENUS LXIV. HYDROPHOBIA.

The Dread of WATER.

322

Hydrophobia, *Sauv.* gen. 231. *Lin.* 86. *Vog.* 30. *Sag.* gen. 343. *Boerb.* 1138. *Junc.* 124. *Mead* on poisons. *Desault* sur la rage. *Sauv.* diff. sur la rage. *James* on canine madness. *Dalby*, Virtues

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Hysteria.

tues of cinnaber and musk against the bite of a mad dog. *Nugent* on the hydrophobia. *Choisel*, Nouvelle methode pour le traitement de la rage. *Journal de Medicine*, passim. *Medical Obs. and Inquiries*, vol. iii. art. 34. vol. v. art. 25. 26. and *App. Med. Transact.* vol. ii. art. 5. 12. and 15. *Heysham*, *Diff. inaug. de rab. canin.* Edinb. 1777. *Parry*, *Diff. inaug. de rab. contagios. five canin.* Edinb. 1778. *Andry*, *Recherches sur la rage*, 1778. *Vaughan*, *Cases of hydrophobia*, second edit. 1778.

323

Sp. I. *HYDROPHOBIA Rabiosa*, or Hydrophoby consequent on the Bite of a Mad Animal.

Hydrophobia vulgaris, *Sauv.* sp. 1.

It is the opinion of some, that Dr Cullen has done wrong in employing the term *hydrophobia* as a generic name, under which canine madness is included; and it must be allowed, that the dread of water, while it is not universal, is also a symptom occurring only late in the disease, at least in the greater part of cases. Perhaps his arrangement would have been less exceptionable, if, following Linnæus, he had adopted *rabies* as a generic term, and had distinguished this particular species by the epithet of *canina*, *contagiosa*, or the like. Disputes, however, about names, are in general not very important; and it is sufficient to observe, that the affection now to be treated of is canine madness, or that disease which arises from the bite of a mad animal.

Description. This disease commonly does not make its attack till a considerable time after the bite. In some few instances it has commenced in seven or eight days from the accident; but generally the patient continues in health for 20, 30, or 40 days, or even much longer. The bite, if not prevented, will in general be healed long before that time, frequently with the greatest ease; though sometimes it resists all kinds of healing applications, and forms a running ulcer which discharges a quantity of matter for many days. It has been said, that the nearer the wounded place is to the salivary glands, the sooner the symptoms of hydrophobia appear. The approach of the disease is known by the cicatrix of the wound becoming high, hard, and elevated, and by a peculiar sense of prickling at the part; pains shoot from it towards the throat: sometimes it is surrounded with livid or red streaks, and seems to be in a state of inflammation; though frequently there is nothing remarkable to be observed about it. The patient becomes melancholy, loves solitude, and has sickness at stomach. Sometimes the peculiar symptom of the disease, the dread of water, comes on all at once. We have an instance of one who, having taken a vomit of ipecacuanha for the sickness he felt at his stomach, was seized with the hydrophobia in the time he was drinking the warm water. Sometimes the disease begins like a common sore throat; and the soreness daily increasing, the hydrophobic symptoms show themselves like a convulsive spasm of the muscles of the fauces. In others, the mind seems to be primarily affected, and they have a real dread of water or any liquid before they try whether they can swallow it or not. Dr James, in his *Treatise on Canine Madness*, mentions a boy sent out to fill two

bottles with water, who was so terrified by the noise of the liquid running into them, that he fled into the house crying out that he was bewitched. He mentions also the case of a farmer, who, going to draw some ale from a cask, was terrified to such a degree at its running into the vessel, that he ran out in a great haste with the spigot in his hand. But in whatever manner this symptom comes on, it is certain that the most painful sensations accompany every attempt to swallow liquids. Nay, the bare sight of water, of a looking-glass, of any thing clear or pellucid, will give the utmost uneasiness, or even throws the patient into convulsions.

With regard to the affection of the mind itself in this disease, it does not appear that the patients are deprived of reason. Some have, merely by the dint of resolution, conquered the dread of water, though they never could conquer the convulsive motions which the contact of liquids occasioned: while this resolution has been of no avail; for the convulsions and other symptoms increasing, have almost always destroyed the unhappy patients.

In this disease there seems to be an extreme sensibility and irritability of the nervous system. The eyes cannot bear the light, or the sight of any thing white; the least touch or motion offends them, and they want to be kept as quiet and in as dark a place as possible. Some complain of the coldness of the air, frequently when it is really warm. Others complain of violent heat; and have a great desire for cold air, which yet never fails to increase the symptoms. In all there is a great flow of viscid saliva into the mouth; which is exceedingly troublesome to the patients, as it has the same effect upon their fauces that other liquids have. This therefore they perpetually blow off with violence, which in a patient of Dr Fothergill's occasioned a noise not unlike the hollow barking of a dog, and which he conjectures might have given rise to the common notion that hydrophobic patients bark like dogs. They have an insatiable thirst; but are unable to get down any drink, except with the utmost difficulty; though sometimes they can swallow bread soaked in liquids, slices of oranges, or other fruits. There is a pain under the *scrobiculus cordis*, as in the tetanus; and the patients mournfully point to that place as the seat of the disease. Dr Vaughan is of opinion that it is this pain, rather than any difficulty in swallowing, which distresses the patient on every attempt to drink. The voice is commonly plaintive and mournful; but Dr Vaughan tells us there is a mixture of fierceness and timidity in the countenance which he cannot describe, but by which he could know a hydrophobic person without asking any questions.

In this distemper, indeed, the symptoms are so various, that they cannot be enumerated; for we will seldom read two cases of hydrophobia which do not differ very remarkably in this respect. Some seem to have at times a furious delirium, and an inclination to spit at or bite the bystanders; while others show no such inclination, but will even suffer people to wipe the inside of their mouths with the corner of a handkerchief in order to clear away the viscid saliva which is ready to suffocate them. In some male patients there is an involuntary erection of the penis, and emission of the

Spasmi

the semen; and the urine is forced away by the frequent return of the spasms. In a letter from Dr Wolf of Warsaw to Henry Baker, F. R. S. dated Warsaw Sept. 26th, 1767, we have the following melancholy account of the cases of five persons who died of the hydrophobia: "None of them quite lost their right senses; but they were all talking without intermission, praying, lamenting, despairing, cursing, sighing, spitting a frothy saliva, screeching, sometimes belching, retching, but rarely vomiting. Every member is convulsed by fits, but most violently from the navel up to the breast and œsophagus. The fit comes on every quarter of an hour; the fauces are not red, nor the tongue dry. The pulse is not at all feverish; and when the fit is over nearly like a sound pulse. The face grows pale, then brown, and during the fit almost black; the lips livid; the head is drowsy, and the ears tingling; the urine limpid. At last they grow weary; the fits are less violent, and cease towards the end; the pulse becomes weak, intermittent, and not very quick; they sweat, and at last the whole body becomes cold. They compose themselves quietly as if to get sleep, and so they expire. The blood drawn a few hours before death appears good in every respect. A general observation was, that the lint and dressings of the wounds, even when dry, were always black, and that when the pus was very good in colour and appearance." In one of Dr Wolf's patients who recovered, the blood stunk intolerably as it was drawn from a vein; and one of Mr Vaughan's patients complained of an intolerable fetid smell proceeding from the wounded part, though nobody but himself could perceive it. In general, the violent convulsions cease a short time before death; and even the hydrophobia goes off, so that the patients can drink freely. But this does not always happen; for Mr Vaughan mentions the case of a patient, in whom, "when he had in appearance ceased to breathe, the spasms cynicus was observable, with an odd convulsive motion in the muscles of the face; and the strange contrariety which took place in the action of these produced the most horrid assemblage of features that can well be conceived. Of this patient also it was remarkable, that in the last hours of his life he ceased to call for drink, which had been his constant request; but was perpetually asking for something to eat."

The hydrophobia seems to be a symptom peculiar to the human race; for the mad animals which communicate the infection, do not seem to have any dread of water. Dr Wolf, in the letter above quoted, says in general, that cattle bit at the same time and by the same animal (a mad wolf) which bit the persons whose cases he related, died nearly with the same frightful raging as the men; but says nothing of their having any hydrophobia: nay, Dr James and some others assert, that the hydrophobia is not always an attendant on rabies canina in the human race; and indeed it is certain that the disease has proved mortal after this terrible symptom has been removed. With regard to the symptoms of madness in dogs, they are very equivocal; and those particularly enumerated by some authors, are only such as might be expected in dogs much heated or agitated by being violently pursued and struck. One symptom indeed, if it could be depended upon, would determine the matter; namely,

that all other dogs avoid and run away from one that is mad; and even large dogs will not attack one of the smallest size who is infected with this disease. Upon this supposition they point out a method of discovering whether a dog who hath been killed was really mad or not; namely, by rubbing a piece of meat along the inside of his mouth, and then offering it to a sound dog. If the latter eats it, it is a sign the dog was not mad; but if the other rejects it with a kind of howling noise, it is certain that he was. Dr James tell us, that among dogs the disease is infectious by staying in the same place; and that after a kennel has been once infected, the dogs put into it will be for a considerable time afterwards in danger of going mad also. A remedy for this, he says, is, to keep geese for some time in the kennel. He rejects as false the opinion that dogs when going mad will not bark; tho' he owns that there is a very considerable change in their bark, which becomes hoarse and hollow.

Causes, &c. In no disease whatever are we more at a loss to discover the causes than in the hydrophobia. In dogs, foxes, and wolves, it seems to come on spontaneously; though this is contested by some authors. It is said, that the causes commonly assigned, viz. heat, feeding upon putrid flesh, want of water, &c. are not sufficient for producing the distemper. It does not appear that madness is more frequent among dogs in the warm than in the cold climates; nay, in the island of Antigua, where the climate is very hot, and the water very scarce, this distemper has never, it is said, been observed. As to putrid aliment, it seems natural for dogs to prefer this to any other, and they have been known to subsist upon it for a long time without any detriment. For these reasons, they think the disease arises from a specific contagion, like the small-pox and measles among the human race, which, being once produced by causes unknown, continues to be propagated by the intercourse which dogs have with each other, as the diseases just mentioned continue to be propagated among the human race by means of the intercourse which they have with one another.

With regard to the immediate cause among mankind, there is not the least doubt that the hydrophobia is occasioned by the saliva of the mad animal being mixed with the blood. It does not appear that this can operate through the cuticula; but, when that is rubbed off, the smallest quantity is sufficient to communicate the disease, and a slight scratch with the teeth of a mad animal has been found as pernicious as a large wound. It is certain also, that the infection has been communicated by the bites of dogs, cats, wolves, foxes, weasels, swine, and even cocks and hens, when in a state of madness. But it does not appear that the distemper is communicable from one hydrophobous person to another, by means of the bite, or any other way. Dr Vaughan inoculated a dog with the saliva of a hydrophobous child, but the animal continued free from disease for two months; and though the doctor promised to inform the public if it should happen to occur afterwards, nothing has hitherto appeared on that subject. A nurse also frequently kissed the child during this time of his disorder, but no bad consequence ensued.

When we attempt to investigate the nature of the

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cause

Hydrophobia.

Spasmi

cause of the hydrophobia by dissections, our inquiries are commonly disappointed. In two bodies opened by Dr Vaughan, there was not the least morbid appearance; in the very fauces, where we might have expected that the disease would have shown itself most evidently, there was not the least appearance even of inflammation. The stomach, intestines, diaphragm, œsophagus, &c. were all in a natural state: neither do we find in authors of credit any certain accounts of morbid appearances in the bodies of hydrophobous persons after death. Dr Vaughan therefore concludes, that the poison acts upon the nervous system; and is so wholly confined to it, that it may be doubted whether the qualities of the blood are altered by it or not; and that it acts upon the nerves by impairing and disturbing their functions to such a degree as speedily to end in a total extinction of the vital principle. As to the difficulty in swallowing generally believed to accompany dread of the water, he treats it as a misrepresentation, as well as that the œsophagus with the muscles subservient to deglutition are especially concerned in this disease. The principal foundation of the evil, he thinks, rests on a morbid sensibility both of the external and internal fauces. For the sight of a liquid, or the application of any substance to the internal fauces, but more especially of a fluid, instantly excites the most painful feelings. Nay, the same symptoms are produced by touching the external fauces with a fluid, or by the contact of cold air with these parts; and nearly in as great a degree. But a solid or a fluid substance being conveyed into the œsophagus, the transit into the stomach is accomplished with little or no impediment; so that in fact the difficulty is surmounted before the patient be engaged in the action of swallowing. Nor is the excruciating pain, which never fails to be the companion of every attempt to drink, felt in the *fauces* and *throat*: it is, he says, at the *scrobiculus cordis*; to which the sufferer applies his hand. From this last circumstance, therefore, from the presence of the *risus sardonius*, from the muscles of the abdomen being forcibly contracted, and from the sense of suffocation which seems to threaten the patient with immediate death, Dr Vaughan has been led to think that in the hydrophobia a new sympathy was established between the fauces, the diaphragm, and the abdominal muscles.

Prognosis. When a person is bit, the prognosis with regard to the ensuing hydrophobia is very uncertain. All those who are bit do not fall into the disease; nay, Dr Vaughan relates, that out of 30 bit by a mad dog, only one was seized with the hydrophobia. During the interval betwixt the bite and the time the disease comes on, there are no symptoms by which we can judge whether it will appear or not. When once it hath made its appearance, the prognosis is exceedingly fatal.

Prevention and Cure. It has been generally allowed by practitioners, that though the hydrophobia may be prevented, yet it can seldom if ever be cured after it has made its appearance. The most essential part of the treatment therefore depends on the proper use of means of prevention. The great objects to be aimed at in prevention, are, in the first place, the complete removal of the contagious matter as soon as possible; or, secondly, means of destroying it at the part,

where there is even the slightest reason to believe that it has not been completely removed. Of all the means of removal, the complete cutting out the part to which the tooth has been applied, is unquestionably the most to be depended upon. This practice, therefore, should be had recourse to as soon as possible. The sooner it can be accomplished, the better. But as it has been observed, that a peculiar sensation at the part affected always precedes the accession of the disease, even when it takes place at a late period after the bite, there is good ground for believing that removal of the part may be of advantage even after a considerable interval. But besides removal of the contagious matter, by cutting away the part to which it is attached, this should also be done by careful and long continued washing. This may be done, in most instances, before a proper opportunity can be had of having recourse to the knife. Cold water should particularly be poured upon the wound from a considerable height, that the matter may be washed away with some force. Even after removal by the knife, careful washing is still a necessary and proper precaution. And after both these, to prevent as far as can be the possibility of any contagious matter lurking about the wounded part, it should not be allowed to heal, but a discharge of matter should be supported for the space of several weeks, by ointment with cantharides, or similar applications. By these means there is at least the best chance of removing the matter at a sufficiently early period. And this mode of prevention seems to be of more consequence than all others put together which have hitherto been discovered. But besides removal, prevention may also be obtained by the destruction of the contagious matter at the part; and where there is the least reason to think that a complete removal has not been obtained, these should always be had recourse to. With this intention the actual cautery and burning with gun-powder have been employed. And the action of fire is probably one of the most powerful agents that can be used for this purpose. But recourse has also been had to washing both with acids and with alkalies. Of the former kind, vinegar has been chiefly used, but more may probably be expected from the latter; and particularly from the caustic alkali, so far diluted that it can be applied with safety: for from its influence as a solvent of animal mucus, it gives a better chance of a complete removal of the matter, independent of any influence in changing its nature. It has been thought also, that oil applied to the part may be of service. But if recourse be had to it, more active measures should at least be previously employed; and even then, some are of opinion that it is of advantage to increase the activity of the unctuous matter by combining it with mercury.

On these grounds, and by these means, we are inclined to think that the action of this contagion on the system, after it has been applied by the bite of a rabid animal, may be most effectually prevented. But after this action has once taken place, no remedy has yet been discovered on which much dependence can be put. A very great variety of articles indeed have at different periods been held forth as infallible, both in the prevention and cure of this affection; but their reputation has, perhaps, universally been founded on their being given to people, who, though really

bit

Spasmi bit by a mad dog, were yet not infected with the contagion. And this happily, either from the tooth being cleaned in making the bite, or not being covered with contagious matter, is by no means an unfrequent occurrence. Mankind, however, even from the earliest ages, have never been without some boasted specific, which has been held forth as an infallible remedy for this affection till fatal experience demonstrated the contrary. Dr Boerhaave has given a pretty full catalogue of those specifics from the days of Galen to his own time; and concludes, that no dependence is to be put in any of them. It is now, therefore, altogether unnecessary to take notice of burnt crabs, the hyæna's skin, mithridate with tin, liver of the rabid animal, or a variety of other pretended remedies for this disease, proved by experience to be totally inefficacious. But although no greater confidence is perhaps to be put on specifics of modern date, it will be proper that these should be mentioned.

Bathing in cold water, especially in the sea, and drinking sea-water for a certain time, have been prescribed, and by some accounted a certain preventive. When this was known to fail, a long course of antiphlogistic regimen, violent submersion in water, even to danger of drowning, and keeping the wounded place open with cauteries, were recommended.—To this extreme severity Dr Mead objected; and in his treatise on this subject endeavours to show, that in all ages the greatest success has been reaped from diuretics, for which reason he proposes the following powder: "Take ash-coloured ground-liverwort, half an ounce; black-pepper, two drachms: reduce them separately to powder, then mix them together." This powder was first published in the Philosophical Transactions, by Mr Dampier, in whose family it had been kept as a secret for many years. But this medicine, which was inserted in former editions of the London and Edinburgh pharmacopœias, under the name of *Pulvis Antilyssus*, has long lost its credit.

There is a famous East-India medicine, composed of 24 grains of native and as much factitious cinnabar, made into a powder with 16 grains of musk. This is called the *Tonquin* medicine, and must be taken into a tea-cupful of arrac or brandy; and is said to secure the patient for 30 days, at the expiration of which it is to be repeated; but if he has any symptoms of the disease, it must be repeated in three hours, which is said to be sufficient for a cure. The first dose is to be taken as soon after the bite as possible.

Another celebrated remedy is Palmarius's powder, composed of the leaves of rue, vervain, sage, polypody, wormwood, mint, mugwort, balm, betony, St John's-wort, and lesser centaury. These herbs must be gathered in their prime, dried separately in the shade, and then powdered. The dose is a drachm, or a drachm and an half, taken every day.

A remedy which might promise to be more efficacious than any of those hitherto mentioned is mercury. This hath been recommended in frictions, and to be taken inwardly in the form of calomel and turbith-mineral, in order if possible to raise a slight salivation, on which the efficacy was thought to depend. Besides this, venesection, opium, the bark, and camphor, have been tried in very large quantities; the warm bath; and, in short, every thing which human invention could suggest; but with what success, can

best be judged from the following well authenticated **Hydrophobia.**

In the beginning of December 1728, a young gentleman, aged 17, was bit by a dog in the middle-finger of the right-hand about the middle of the nail. In the beginning of January 1729, he complained of pain in that finger reaching along the back of the hand to the elbow. In the night between the sixth and seventh days of that month, he became hot and restless: emollient and anodyne fomentations were applied; but the pain became very sharp, and the hydrophobia came on in the night-time. He was bloodied; but became worse every hour, and at last quite furious and outrageous. The bandage was thrown off from his arm, and he lost about 20 ounces of blood besides what had formerly been taken from him. This, however, made no abatement of the symptoms, and he died the same night.

In 1753, a woman, seized with the hydrophobia in consequence of the bite of a dog supposed to be mad, was treated in the following manner by Dr Nugent. First she was bloodied to about 15 ounces; she took 15 grains of musk in powder, and alongst with it a pill of two grains of pure opium, every three hours. A plaster of galbanum, with half an ounce of pure opium, was laid to her neck and throat. She began to take these medicines on a Saturday morning, an hour or two after the dread of water had commenced. In the evening she was a little easier at intervals. The musk and opium pill were continued as before, and the hand that was bit was ordered to be chafed with warm salad oil several times a-day. Only two papers of powder and two pills were taken in the night, for the last made her sick and vomit. She had little or no sleep, but lay pretty quiet.—On Sunday, 20 ounces of blood were taken away, and a clyster with antimonial wine injected: the pills and powders were continued as before. On Sunday evening she could swallow liquids a little better, and she lay quiet most of the night. On Monday her swallowing was greatly better. The musk and opium were continued, and twelve ounces more of blood were taken from her; the plaster was renewed with only two drachms of opium, and the oil was used as before. At night she was better; her hand easy; and by a continuance of these remedies she recovered.—This was the case which chiefly brought opium into reputation.

The following cases published by M. Dessault, a Frenchman, first brought mercury into reputation.—Four men were bitten by the same wolf, on the same day, at the same hour. They were dipped in salt-water, and came back persuaded that they had nothing to fear. Some days after, one of them felt a numbed pain about his scars, while the scars themselves grew hard and rose like an embroidery: he was soon after seized with the usual symptoms, as was also another. The son of the former likewise began to feel a pain about the cicatrices, and a swelling with hardness; as did also the fourth. They were ordered to rub a drachm and a half of the mercurial or blue ointment upon the cicatrices and about the whole arm. This was repeated three days successively, and then every other day: after the fifth friction, he allowed an interval of two days. Besides this, they took every day a drachm and an half of Palmarius's powder. After the third friction the cicatrices grew flat and soft, the pain went

Spasmi

went off, their courage returned, and their mind resumed its former tranquillity.

But how far mercury, or indeed any thing else, is from being a *specific* in the hydrophobia, will appear from the following account of Dr Wolf's patients.—In the middle of April 1767, seventeen people and a great number of cattle were bitten in the neighbourhood of Warsaw by a mad wolf. One of these, an officer, was brought into the city that same day, and had the best advice of the surgeons and physicians in that place; besides which, he took the bark very copiously with camphor. He continued well till the seventh week, when he became hydrophobous, and died.

Eleven of the others applied to Dr Wolf on the ninth day. Their wounds were all deeply scarified; diligently washed and fomented with vinegar, salt, and theriaca; and kept open till the 80th day, in those who lived so long. Every two weeks they were blooded largely, and were purged every week with salts and jalap. Their diet was mostly vegetable, and their drink whey and water. They all eat as much as could be got of the herbs *matrisylva* and *anagallis flore puniceo*; and they all took often of the *pulvis Palmarii*. The *muscus cinereus terrestris* could not be got, or it would also have been prescribed. Besides the general treatment, two were rubbed daily with a drachm of mercurial ointment, and had their purges with calomel. Two took every day four ounces of vinegar, three drachms tincture of poppies, and half an ounce of *rob sambuci* every night. One took every day 16 grains of camphor, with four scruples of salt-petre, and at night half an ounce of *rob sambuci*.—Two took 24 grains of musk, with 50 grains of cinnabar. Other two took from 40 to 60 drops of spirit of sal ammoniac, prepared with quick-lime; and the last took a scruple of crystallized salt of tartar made by the mixture of a little spirit of sal ammoniac with a solution of that salt.

One of the first who used the mercurial ointment was seized with the hydrophobia on the 22d day, immediately after being well purged with calomel. He was blooded copiously, plunged abundantly in cold water, and had several clysters administered, without effect. Two pounds of oil, and as much of drink, were poured down by force; also a drachm of salt of tartar and half a drachm of musk were given in three doses. He then began to drink freely, but died the third day. His companion then left off the use of mercury, and took 80 drops a-day of Dippel's animal oil, till he had taken six drachms of it; after which he went on with 100 drops daily of spirit of sal ammoniac made with alkali.

One of those who took the vinegar fell sick the 33d day. He was immediately blooded, and vomited with ipecacuanha. This man was too strong to make experiments on by force: he refused every thing, and died the third day. His companion, an old man, began to be seized in the same manner: he was purged with salts, took the *moscula balsami Peruviani*, and drank lemonade. He recovered, and used afterwards 100 drops of spirit of sal ammoniac daily. This was the patient formerly mentioned, whose blood had the fetid smell.

The man who used the camphor fell sick the 33d day. He was thrice copiously blooded, was plunged

forcibly into the coldest water for the space of two hours, and was nearly drowned. He was clystered with effect. He himself forced down, with incredible aversion and labour, a great quantity of drink; by which he vomited more than 50 times abundance of frothy slime. He took several ounces of oil, and several boluses of castor and opium, of each four grains, without effect; and died the fourth day.

A girl who used the musk with cinnabar, fell ill the 62d day, and died the third day after. No farther attempt was made to save her life, she being then at a distance. Her companion, a pregnant woman, then left off the musk, and took in its stead spirit of sal ammoniac.

A woman who had taken nothing, fell ill on the 40th day. She suffered terribly in the night, but less in the day-time. Besides the usual symptoms, she had great pain and swelling in her belly. In the space of two days she drank about two bottles of brandy, but would taste no other liquor. The Doctor ordered her to mix an equal quantity of oil with her brandy, and to take every day two boluses of castor and opium.—She recovered: and at last took two doses of turbith-mineral, by which she was vomited and purged.

After the 80th day, all the surviving people took thrice the turbith-mineral, except the pregnant woman; and they afterwards continued their alkaline medicines to the 100th day.

On these cases Dr Wolf makes the following observations.—“Thus we see, that the bark, the mercury, the acids, the musk, the feeding on the most famous herbs, the sweating, the *cura antiphlogistica*, are no specifics. I don't know what to say to the alkalies: the danger is not yet over; and there are still four people who used nothing, in as good health as my patients.”

The following case by Dr Raymond of Marseilles, shows the inefficacy of mercury even as a *preventive*.—On the 19th of July 1765, Mr Boyer, aged 25, of a bloated cachectic habit, was bit by a mad dog in the inferior part of the leg: the wound extended half way round, bled freely, and was like a great scratch. The patient's legs had been swelled for a considerable time before the accident; and there were also two ulcers in the other leg. Some hours after the accident, the actualcautery was applied to the wound. The Doctor was not present at this operation; but the part around the bite was rubbed with mercurial ointment immediately after, and the eschar was dressed with the same ointment. The eschar was separated on the first day, but the dressing was continued till the wound was cicatrized. The second day a bolus of four grains of turbith and eight grains of camphor was exhibited. This procured a considerable evacuation both by vomit and stool, and a spitting also came on. The third day the bitten leg was rubbed with mercurial ointment: in the space of a month the frictions were repeated five times on both legs, three drachms of mercurial ointment being used in each friction. During the same time the bolus was five times repeated; and this treatment kept up a slight salivation to the 40th day. The evening of the third day he took the *Tonquin medicine*, called also *Sir George Cobb's powder*, in a bolus; which vomited him briskly. This powder was repeated seven or eight times in the month, generally with the same effect. During the first seven or eight days he got four times,

Spasmi

times, in the morning, a drachm of the *anagallis flore puniceo*, fresh gathered and powdered. The 41st day, the turbith bolus was prescribed for the seventh time; he was bathed in the sea, and continued the bathing for two days more. On the 74th he was seized with the distemper; and died on the 76th, seemingly suffocated or strangled, his mouth covered with slaver, and his face bloated. He lost his senses not above half a quarter of an hour before his death. The pulse was quiet the whole time. The Doctor says he has reason to suspect the wound was not well cauterized.

Another instance is mentioned by the same author, of a pregnant woman bit by the same dog and on the same day with Mr Boyer, who was never seized with the distemper. She was treated in much the same manner with him, and salivated a little more. But she was bit through a shamoy leather shoe, which must necessarily have cleaned the animal's teeth of the poisonous saliva before they reached her skin, and to this we are naturally led to ascribe her safety. One of Dr Wolf's patients also was a pregnant woman, and was not seized with the distemper. Perhaps women in a state of pregnancy may be less liable to this distemper than others; but it is more probable that the contagion was not communicated.

The same author tells us, "there are many examples of the inefficacy of mercurial frictions. A surgeon of Marseilles treated a girl about 12 years of age bit by a mad dog, with mercurial frictions; applying them as in the *lues venerea*: yet she died of the hydrophobia on the 55th day. Her wound was not cauterized."

In the following case all the most powerful remedies were tried.—In the afternoon of the 29th of Aug. 1778, Dr Vaughan was called to a boy of eight years of age labouring under a hydrophobia. He had been bit on the wrist by a cat about a month before; of which the marks remained, but without any ulcer, or even the smallest appearance of inflammation. About the middle of the day before Dr Vaughan saw him, he began to complain of a pain in the part bitten, which ascended up the arm, and affected the temple on that side; soon after which he swallowed liquids with reluctance and difficulty. He was put into the warm bath for three quarters of an hour, during which time he was easier: he had a clyster of five ounces of fresh broth, and 30 drops of laudanum, injected immediately after his coming out of it; a liniment consisting of three drachms of strong mercurial ointment, with the same quantity of oil of amber, was rubbed upon the shoulders and back; two pills of a grain of flowers of zinc, and half a grain of *cuprum ammoniacum*, were taken every three or four hours; and a medicated atmosphere was prepared for him, by burning gum ammoniac in his room. As these remedies were not attended with any good effect, each dose of pills was ordered to contain two grains of *cuprum ammoniacum*, the same quantity of opium, three grains of flowers of zinc, and ten grains of *asafetida*; whilst a solution of that fetid gum, with a drachm of laudanum, was administered as a clyster. These pills, though repeated every four hours, afforded not the smallest relief, nor did they show the least action on the frame. At last the Doctor resolved to put in practice the desperate remedy mentioned by Van Helmont, of throwing the patient into cold water, and keeping him

there till he is almost drowned. With this view a large tub of cold water, well saturated with common salt, was prepared, into which the poor boy was plunged over head and ears, and there held until he ceased to struggle. He was then taken out again, and the same operation repeated until he became so quiet that the Doctor was under apprehensions that a total extinction of life would take place. He was then wrapped up in a blanket and put to bed, and he remained more quiet than he had formerly been; but all his former restlessness soon returned, his pulse sunk, and he died about two o'clock in the morning.

Another celebrated antidote against the poison of a mad dog hath been known for some years by the name of the *Ormskirk medicine*. The true composition of this is kept a secret by the proprietors: however, it has been analysed, and the following composition published by Dr Heysham as perfectly similar to it in all respects.

"Take half an ounce of chalk, three drachms of Armenian bole, ten grains of alum, one drachm of elecampane in powder; mix them all together, and add six drops of oil of anise."

They must certainly be very credulous who can put confidence in such an insignificant medicine as a preservative against the hydrophobia: however, there is a possibility that there may be some unknown ingredient in the genuine powder; for it is difficult to analyse powders after the ingredients are thoroughly mixed together. The efficacy of the medicine therefore must depend on the virtues of that unknown ingredient, if any such there be. The following cases, however, too well determine that it is not *infallible*, as was at first pretended. In all probability, as well as many others, its reputation also is solely rested on its being exhibited in many cases where no contagion was communicated to the person bit, and while of course no disease could take place.

On the 14th of February 1774, Mr Bellamy of Holborn, aged 40, was bit by a cat, which was killed the same morning. The following day he took the celebrated Ormskirk medicine, sold by Hill and Berry in Hill-Street, Berkeley-Square, and conformed in every respect to the directions given by the vender. A servant-maid, who was bitten in the leg before her master was bitten, likewise took the same remedy. About the middle of April Mr Bellamy complained of a pain in his right knee, which he supposed to be rheumatic, and which continued and increased till the 7th of June, when he got some pills of calomel, ipecacuanha, and *pil. sapon.* from an apothecary, with Huxham's tincture of the bark in small doses. In six days more he had a titillation in the urethra, a contraction of the scrotum and penis to a degree of pain, and an emission of semen after making water, to which he had frequent calls. The medicines were discontinued; and on the 16th of that month the hydrophobia came on, and Dr Fothergill was called. Six ounces of blood were taken from his arm, and a bolus of a scruple of native cinnabar and half a scruple of musk was given every four hours. The distemper manifestly increased through the day. In the evening a clyster was injected, and several times repeated during the night; he had been put into the warm bath, and two drachms of strong mercurial ointment rubbed into his legs and thighs by himself.

Spasmi

himself. He was greatly relieved by the warm bath while he continued in it, but the symptoms returned with increased violence in the night. The next day, being greatly worse, he was bled to as great a quantity as he could bear, had the warm bath and clysters repeated, and half an ounce of mercurial ointment rubbed into his thighs and legs. Pills of opium were prescribed, but he did not take them. He died the same night, at half an hour after 12. This patient was a man of great resolution, and could in part conquer his aversion at water. He seemed to have totally forgot the accident of the bite: and casually said, that he thought this disorder resembled the hydrophobia, without supposing that he was afflicted with that distemper at the time.—The bite on the girl's leg refused to heal, baffled the art of a young surgeon who attempted to cure it, and continued a running ulcer for a long time. She did not fall into the hydrophobia. Hence Dr Fothergill thinks it probable, that keeping the wounds made by the teeth of mad animals open for a long time, would probably be of service as a preventive; but in some of Dr Wolf's patients, these artificial drains appear not to have been attended with success.

On the 16th of November 1773, Thomas Nourse, a strong healthy boy of 14, was admitted into the Leicester infirmary; having been that day month bitten by a mad fox-hound. The wound was a large lacerated one on the cheek, and bled very freely on being inflicted. The day after he was bit he went to the sea, where he was dipped with all the severity usually practised under so disagreeable an operation. The *Ormskirk medicine* was also administered with all due care. It was bought of the person in Leicester who is deputed by the proprietor to sell it for him. A common adhesive plaster was applied to the part after sea-bathing; and in the course of a month, without any further trouble, the wound was healed; excepting a small portion, somewhat more than an inch in length, and in breadth about one-tenth. This yielded no discharge, and was quite in a cicatrizing state. Five days before his admission into the infirmary, he began to complain of a tightness over his temples, and a pain in his head: in two days the hydrophobia began to appear; and at its commencement he complained of a *boiling heat* in his stomach, which was continually ascending to the fauces. The disease was pretty strong when he came to the infirmary. He got a bolus of a scruple of musk with two grains of opium; then a composition of 15 grains of musk, one of turbith mineral, and five grains of opium, was directed to be taken every third hour; an ounce of the stronger mercurial ointment was to be rubbed on the cervical vertebræ and shoulders, and an embrocation of two ounces of laudanum, and half an ounce of *acetum saturninum*, was directed to be applied to the throat. But by this last he was thrown into convulsions, and the same effect followed though his eyes were first covered with a napkin. The embrocation was therefore changed for a plaster of three drachms of powdered camphor, half an ounce of opium, and six drachms *confectio Damocritidis*. By these medicines the disease seemed to be somewhat suspended, but the symptoms returned with violence in the evening. His medicine was repeated at seven; and at eight

Nº 207.

five grains of opium were exhibited without musk or turbith. At nine, another ounce of mercurial ointment was rubbed upon the shoulders, and half an ounce of laudanum with six ounces of mutton-broth was injected into the intestines, but to no purpose. A larger dose of opium was then given, but with as little effect as the former, and he died the same night.

In the month of September 1774, a farmer, aged 25, was bit by a mad dog, whose teeth made a slight wound in the fore-finger of the left hand. He was dipped, as usual, in the sea; and drank the sea-water for some time on the spot, which operated briskly as a purge. He continued well till the 6th of June following, when he first felt a pain in that hand and arm; for which he bathed in a river that evening, supposing that it had been a rheumatic complaint. The next day he was sick; and in the evening was seized with a violent vomiting, which continued all that night and till the middle of the next day, when it was succeeded by the hydrophobia. He was treated with the warm bath; had a purgative clyster injected; and as soon as it had operated, a second was given, consisting of four ounces of oil, and half an ounce of laudanum: half an ounce of strong mercurial ointment was rubbed on the fauces, and the part was afterwards covered with the *cataplasma e cymino*, to which was added an ounce of opium. An embrocation was applied to the region of the stomach with continued friction, consisting of half an ounce of spirit of sal ammoniac, ten drachms of oil olive, six drachms of oil of amber, and ten drachms of laudanum. Two ounces of strong mercurial ointment were rubbed upon the shoulders and back; and as a further means of kindling a ptyalism speedily, he received the smoke of cinnabar into the mouth by throwing a drachm of that substance now and then upon a hot iron: he was also directed to take every four hours a bolus of 15 grains of musk, three grains of turbith mineral, and four grains of opium. He was easier while in the warm bath, and during the application of the ointment; but died the same night about two o'clock.

Many other instances might be adduced of the inefficacy of this pretended specific: the danger of acquiescing in which, will, it is hoped, create a due degree of caution in those to whom they who are so unfortunate as to be bit by a mad animal may commit themselves. Another remedy may also be mentioned as having had the reputation of being sometimes successful in this disease; which is chiefly employed in different parts of India, particularly in the territory of Tanjore. The medicine to which we now allude contains indeed several articles which are altogether unknown in our materia medica: but it contains at least one very powerful substance well known to us, viz. arsenic. This medicine, known by the name of the Snake Pills, as being principally employed against the bite of the most venomous snakes, is directed to be prepared in the following manner:

Take white arsenic, of the roots of nelli navi, of nevi visham, of the kernels of the ner valum, of pepper, of quicksilver, each an equal quantity. The quicksilver is to be rubbed with the juice of the wild cotton till the globules are perfectly extinguished.

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Spasmi The arsenic being first levigated, the other ingredients, reduced to a powder, are then to be added, and the whole beat together with the juice of the wild cotton to a consistence fit to be divided into pills.

Though these pills are principally used against the bite of the cobra de capello, yet they are said also to be successful in the cure of other venomous bites; and, for the prevention of rabies canina, one is taken every morning for some length of time. Of this remedy European practitioners have, we believe, as yet no experience; and if, in the accounts transmitted by East India practitioners, it cannot be said that we have authentic evidence of its want of success, it can as little be pretended that there is indubitable evidence of its efficacy in any instance; and it is by no means improbable, that it will be found equally inefficacious with others at one time considered as infallible.

Of the great variety of remedies which have had their day of reputation, there is not one which has not possessed the credit, some time or other, of preventing the noxious effects arising from the bite of a mad dog. A more adequate experience has with all of them discovered the deception. It was above observed, that the hydrophobia is by no means the infallible consequence of being bit by a mad animal; and that of between 20 and 30 persons who were bit by the dog which gave the fatal wound to one of Dr Vaughan's patients, not one felt the least ill effect but himself. "In the above number (says the Doctor) were some who took the Ormskirk Medicine; others went to the salt-water; and a part of them used no remedy, who yet fared equally well with the most attentive to their injury. The same thing has often happened before; and much merit, I doubt not, has been attributed to the medicine taken, from that celebrated one of *Sir George Cobb* down to the infallible one which my good *Lady Bountiful's* receipt-book furnishes."

From all that has been said, the reader will judge how far the hydrophobia is capable of being subdued by any of the medicinal powers which have yet been tried. Some eminent physicians assert that it is totally incurable; and allege that the instances recorded by different authors of its cure have not been the genuine kind, but that which comes on spontaneously, and which is by no means so dangerous. Indeed two of Dr Wolf's patients recovered, where the disease seems to have been perfectly genuine: but in these the poison seemed to vent itself partly on some other place besides the nervous system. In one the blood was evidently infected, as it had an abominable fætor; and the other had a violent pain and swelling in the belly. In all the others, it seemed to have attacked only the nervous system; which perhaps has not the same ability to throw off any offending matter as the vascular system.

There is, however, a possibility that the prodigious affections of the nerves may arise only from a vitiated state of the gastric juices; for it is well known, that the most terrible convulsions, nay the hydrophobia itself, will arise from an affection of the stomach, without any bite of a mad animal. This seems to be somewhat confirmed from one of Dr Wolf's patients, who, though he vomited more than 50 times, yet still threw up a frothy matter, which was therefore evi-

dently secreted into the stomach, just as a continual vomiting of bilious matter shows a continual and extraordinary secretion of bile. Dr Wolf himself adopts this hypothesis so far as to say, that perhaps the serum may become frothy; but in blood drawn from a vein not the least fault appears either in the serum or crassamentum. He affirms, however, that the duodenum appears to be one of the parts first and principally affected; and as it is not inflamed, it would seem that the affection it sustains must arise from the vitiated state of its juices.

Be this as it will, however, in the hydrophobia, the stomach seems totally, or in a great measure, to lose the power which at other times it possesses. Two grains of *cuprum ammoniacum* were repeatedly given to a child of eight years of age without effect; but this dose would occasion violent vomiting in a strong healthy man. Something or other therefore must have prevented this substance from acting on the nervous coat of the stomach; and this we can only suppose to have been the exceedingly disordered state of the gastric juice, which occasioned such violent irritation through the whole body, that the weaker stimulus of the medicine was entirely lost. It would seem proper therefore to consider the stomach in hydrophobic cases as really containing a poisonous matter, which could not be expelled by vomiting, because it is renewed as fast as evacuated. The indication therefore must be, to change its nature by such medicines as are certainly more powerful than the poison; and this indication will naturally lead us to think of large doses of alkaline salts. These, it is certain, will destroy any animal-substance with which they come in contact, and render even the poison of serpents inactive. By exhibiting a few doses of them, larger no doubt than what could be safely done on other occasions, we would be certain to change the state of the stomachic juices; and thus might free the patient from those intolerable spasms which always occasion death in such a short time. Dr Wolf seems inclined to think that volatile alkalies were of service; but the above hypothesis would incline us to use rather the fixed kind. At any rate, it seems vain for physicians to trust much to the power of opium, mercury, musk, or cinnabar, either singly or combined in any possible way. The bark has also failed, and the most celebrated specifics have been found ineffectual. Alkalies are the next most powerful remedies which the *materia medica* affords, and they cannot be more unsuccessful than the others have generally been.

Another remedy which seems adapted to change the nature of the gastric juices is ardent spirits. In one of Dr Wolf's patients two bottles of brandy seem to have effected a cure. The oil mixed with it was of no efficacy in other cases, and the opium and turbitb seem not to have been exhibited till the worst was past. In this case the disease seems to have attacked the vascular as well as the nervous system.

In all the patients the warm bath seems to have been a palliative, and a very powerful one, and as such it ought never to be omitted, though we can by no means trust to it as a radical cure; and the above histories abundantly show, that though the warm bath and opium may palliate for a short time, the cause on

Hydrophobia.

Spasmi

which the spasms depend is still going on and increasing, till at last the symptoms become too strong to be palliated even for a moment by any medicine however powerful. At any rate, the above mentioned hypothesis suggests a new indication, which, if attended to, may perhaps lead to useful discoveries. In cases where putrescent bile is abundantly secreted, columbo root and vegetable acids are recommended to change the nature of the poison which the body is perpetually producing in itself. Where corrosive mercury hath been swallowed, alkaline salt is recommended to destroy the poison which nature cannot expel by vomiting; and why should not something be attempted to destroy the poison which the stomach seems to secrete in the hydrophobia, and which nature attempts to expel, though in vain, by violent efforts to vomit?

But whatever plan may be pursued in the hopes of curing this dreadful malady after any of the symptoms have made their appearance, we ought, in every instance of the accident that gives rise to it, to direct our immediate care to *prevention*, as being perhaps the only real ground of hope: And the most certain and efficacious way of preventing the ill consequences, is instantly (if it may be done) to cut out the piece in the place that happens to be bitten. Dr James, indeed, says, that he would have little opinion of cutting or cauterising, if ten minutes were suffered to elapse from the receiving of the bite before the operation was performed. But in an inaugural dissertation lately published at Edinburgh by Dr Parry, the author is of opinion that excision will be of use a considerable time after the bite is received. He adopts this opinion from what happens in the small-pox, where the blood does not seem to receive the infection till some days after inoculation has been performed. A second inflammation, he tells us, then takes place, and the infection is conveyed into the blood. In like manner, when the hydrophobous infection is about to be conveyed into the blood, according to him, the wound, or its cicatrix, begins again to be inflamed; and it is this second inflammation which does all the mischief. Excision, or the cautery, will therefore be effectual any time betwixt the bite and the second inflammation of the wound. Without implicitly trusting to this doctrine, however, or considering it as in any degree ascertained in what manner the poison diffuses itself, by what marks its progress may be known, or how soon the system may be irremediably tainted with its malignity, it is undoubtedly safest not to lose unnecessarily a moment's time in applying the knife. This, or a dilation of the wound if it be small, Dr Vaughan considers as the only prophylactics that can be depended upon. In the latter case, he directs to fill the wound with gunpowder, and set fire to it; which would produce a laceration of the part, and possibly the action of ignited powder upon the poison may have its use. In all cases, likewise, after these practices have been employed, the wound should be prevented from healing for some length of time.

Sp. II. The Spontaneous HYDROPHOBIA.

Hydrophobia spontanea, *Sauv.* sp. 2.

This disease very much resembles the former, so that it has undoubtedly been often mistaken for it. It has been known to come on from an inflammation of the

stomach, where it was cured by repeated and large blood-letting; in hysteria, where it was cured by opium, musk, or other antispasmodics; and in putrid fevers, where it was cured by evacuating the intestinal canal of the putrid matters by repeated clysters. A very good method of distinguishing the two is, that in the spontaneous hydrophobia the patient is much more delirious than in the genuine species. In the instance mentioned in the Medical Essays of this symptom attending the inflammation of the stomach, the patient *raved in the most extraordinary manner*. Dr Raymond says he remembers a spontaneous hydrophobia attended *with madness*; and in almost all the cases of hydrophobia which are said to have been cured, the patient was very delirious. Dr Nugent's patient was very frequently delirious, and dreaded *dogs* as well as water. In the Medical Transactions a case is communicated by W. Wrightson surgeon in Sedgefield, Durham, of *canine madness* successfully treated. This madness indeed came on after the bite of a dog said to be mad: but it appeared only four days after the accident happened, and was attended with symptoms very unlike any of those abovementioned; for he suddenly started up in a fit of delirium, and ran out of the house, and after being brought in, caught hold of the hot bars of the grate which held the fire: Whereas, in the true hydrophobia, the patients dread the fire, light, or any thing which makes a strong impression on the senses, exceedingly. It is probable, therefore, that this was only a spontaneous hydrophobia, especially as it readily yielded to venesection, 30 drops of laudanum, and pills of a grain and an half of opium given every three hours, some boluses of musk and cinnabar, &c. while in some of the former cases as much opium was given to a boy as would have deprived of life the strongest healthy man had he swallowed it; and yet this amazing quantity produced scarce any effect. This patient also dreaded the sight of a dog.

Hydrophobia.

ORDER IV. VESANIAE.

325

Paranoia, *Vog.* Class IX.

Deliria, *Sauv.* Class VIII. Ord. III. *Sag.* Class XI. Ord. III.

Ideales, *Lin.* Class V. Ord. I.

GENUS LXV. AMENTIA.

FOLLY, or *Idiotism*.

326

Amentia, *Sauv.* gen. 233. *Vog.* 337. *Sag.* 346.

Morosis, *Lin.* 106.

Stupiditas, Morosis, Fatuitas, *Vog.* 336.

Amnesia, *Sauv.* gen. 237. *Sag.* 347.

Oblivio, *Lin.* 107. *Vog.* 338.

Memoriae debilitas, *Junck.* 120.

GENUS LXVI. MELANCHOLIA.

MELANCHOLY *Madness*.

327

Melancholia, *Sauv.* gen. 234. *Lin.* 71. *Vog.* 332.

Sag. 347. *Boerb.* 1089. *Junck.* 121.

Dæmonomania, *Sauv.* gen. 236. *Sag.* 348.

Dæmonia, *Lin.* 69.

Vesania, *Lin.* 70.

Paraphobia, *Lin.* 75.

Athymia, *Vog.* 329.

Delir.

324

Vesania

Delirium melancholicum, *Hoffm.* III. 251.Erotomania, *Lin.* 82.Nostalgia, *Sauv.* gen. 226. *Lin.* 83. *Sag.* 338. *Junck.* 125.Melancholia nervea, *Cl. Lorry* de melancholia, P. I.

328

GENUS LXVII. MANIA.

RAVING OR FURIOUS Madnefs.

Mania, *Sauv.* gen. 235. *Lin.* 68. *Vog.* 331. *Sag.* 349. *Boerb.* 1118. *Junck.* 122. *Battie* on Madnefs.Paraphrosyne, *Lin.* 66.Amentia, *Lin.* 67.Delirium maniacum, *Hoffm.* III. 251.

Although these distempers may be considered as distinct genera, yet they are so nearly allied, and so readily change into each other, that it sufficiently justifies the treating all of them together.

The distinguishing characteristic of madnefs, according to Dr Battie, is a *false perception*; and under this general character may be comprehended all kinds of what is called *madnefs*, from the most silly stupidity and idiotism to the most furious lunacy. Frequently the different kinds of madnefs are changed into each other by the casual excitement of some passion: thus, an idiot may become furiously mad, by being put in a violent passion; though this does not so often happen as the change of melancholy into the raving madnefs, and *vice versa*.

It is a very surprising circumstance, that mad people are not only less liable to be seized with infectious disorders than those who are in perfect health; but even when labouring under other diseases, if the patients chance to be seized with madnefs, they are sometimes freed from their former complaints. Of this kind Dr Mead relates two very remarkable instances.

On the other hand, it has been known, that an intermittent fever, supervening madnefs of long standing, has proved a cure for the madnefs; the senses having returned when the fever terminated. Dr Monro saw two instances of this himself; and mentions it as an observation of his predecessor in the care of Bethlehem hospital.

Another remarkable circumstance is, that immoderate joy, long continued, as effectually disorders the mind as anxiety and grief. For it was observable in the famous South-Sea year, when so many immense fortunes were suddenly gained, and as suddenly lost, that more people had their heads turned, from the prodigious flow of unexpected riches, than from the entire loss of their whole substance.

Mad people, especially of the melancholic kind, sometimes obstinately persevere in doing things which must excite great pain; whence it should seem as if their minds were troubled with some distracting notions, which make them patiently bear the present distress, lest more severe tortures should be inflicted; or possibly they may think, that, by thus tormenting the body, they render themselves more acceptable to the divine Being, and expiate the heinous sins of which they may imagine themselves to have been guilty.

It is, however, also highly probable, that their feelings differ exceedingly from what they are in a natural state; at least they are every day observed to endure, apparently without the smallest uneasiness, watch-

ing, hunger, and cold, to an extent which in a state of health would not only be highly distressing, but to the greater part of individuals would even prove fatal. And this resistance of hunger, cold, and sleep, affords perhaps the best test for distinguishing cases of real insanity, from cases where the disease is only feigned, and appearances of it put on, to answer particular purposes; at least where this power of resistance is present, we have good reason to conclude that the affection is not feigned.

Cure. Although we be well acquainted with many of the remote causes of this disease, some of the principal of which have already been mentioned, yet we are still so ignorant of the influence of these upon the system, as giving a derangement of the mental faculties, that no general principles on which the cure may be conducted, can with any confidence be pointed out.

It may, however, be observed, that while some remedies seem to operate by producing an artificial termination of this complaint, many others have effect only as aiding a natural termination. And where a recovery from this disease does take place, it most frequently happens in consequence of a natural convalescence. All the species and degrees of madnefs which are hereditary, or that grow up with people from their early youth, are out of the power of physic; and so, for the most part, are all maniacal cases of more than one year's standing, let them arise from what source soever. Very often mere debility, the dregs of some particular disease, such as an ague, the small-pox, or a nervous fever, shall occasion different degrees of foolishness or madnefs. In these cases, the cure must not be attempted by evacuations; but, on the contrary, by nourishing diet, clear air, moderate exercise, and the use of wine: whereas, in almost all the other maniacal cases, which arise from different sources, and which come on in consequence of intemperate living, violent passions, or intense thinking, it is generally held, that evacuations of every kind are necessary, unless the constitution of the patient be such as absolutely forbids them.

Blood is most conveniently drawn either from the arm or jugulars; and if the weakness be such as renders it improper to take away much blood, we may apply cupping-glasses to the occiput.

Vomiting, in weakly people, must be excited by the vinum ipecacuanæ; but in the more robust by emetic tartar or antimonial wine: the most efficacious cathartics are the infusion or tincture of black hellebore, or infusion of senna quickened with tincture of jalap; but if there be suppression of the menses, or hæmorrhoidal discharge, then aloetic purges will be more proper; and in some instances cooling saline purgatives, such as lixiviated tartar, are of great service. In general, mad people require very large doses, both of the emetics and cathartics, before any considerable operation ensues.

Dr Monro assures us, that the evacuation by vomiting is infinitely preferable to any other: the prodigious quantity of phlegm with which the patients in this disease abound, he says, is not to be got the better of but by repeated emetics; and he observes, that the purges have not their right effect, or do not operate to so good purpose, until the phlegm be broken

Mania.

and attenuated by frequent emetics. He mentions the case of a gentleman who had laboured under a melancholy for three years, from which he was relieved entirely by the use of vomits and a proper regimen. Increasing the discharge by urine, is also of the greatest moment, especially when any degree of fever is present. The cutaneous discharges are also to be promoted; for which purpose the hot bath is of the highest service in maniacal cases. Hoffman asserts, that he has seen numerous instances, both of inveterate melancholy and raging madness, happily cured by means of warm bathing; bleeding and nitrous medicines having been premised. Camphor has also been highly commended; but, if we can believe Dr Locker of Vienna, not very deservedly. Having found very good effects from a solution of this medicine in vinegar, he took it for granted that all the success was owing to the camphor; therefore, in order to give it a fair trial, he selected seven patients, and gave it in large doses of half a drachm twice a-day. This was continued for two months, and the doctor was surprised to find that only one of his patients received any benefit. He then returned the other six back to the camphorated julep made with vinegar, and in a few weeks four of them recovered the use of their reason. This inclined him to think that the virtue depended solely on the vinegar, and accordingly he began to make the trial. Common vinegar was first given: but after a little while he fixed on that which had been distilled, and gave about an ounce and half of it every day; the patients having been previously prepared by bleeding and purging, which was repeated according as it was found necessary. He gives a list of eight patients who were cured by this method; some in six weeks, others in two months, and none of them took up more than three months in perfecting the cure. He does not indeed give the ages of the patients, nor mention the circumstances of the case; he only mentions the day on which the use of the vinegar was begun and the day on which they were discharged; and he adds, that they all continued well at the time of his writing.

Dr Locker informs us, that this medicine acts chiefly as a sudorific; and he observed, that the more the patients sweated, the sooner they were cured: it was also found to promote the menstrual discharge in such as had been obstructed, or had too little of this salutary evacuation.

Both reason and experience show the necessity of confining such as are deprived of their senses; and no small share of the management consists in hindering them to hurt themselves or do mischief to other persons. It has sometimes been usual to chain and to beat them: but this is both cruel and absurd; since the contrivance called the *strait waistcoat* answers every purpose of restraining the patients without hurting them.

These waistcoats are made of ticken, or some such strong stuff; are open at the back, and laced on like a pair of stays; the sleeves are made tight, and long enough to cover the ends of the fingers, where they are drawn close with a string like a purse, by which contrivance the patient has no power of his fingers; and, when laid on his back in bed, and the arms brought across the chest, and fastened in that position

by tying the sleeve-strings round the waist, he has no use of his hands. A broad strap of girth-web is then carried across the breast, and fastened to the bedstead, by which means the patient is confined on his back; and if he should be so outrageous as to require further restraint, the legs are secured by ligatures to the foot of the bed; or they may be secured by being both put into one bag not very wide, which may be more easily fixed than the feet themselves, at least without giving pain.

It is of great use in practice to bear in mind, that all mad people are cowardly, and can be awed even by the menacing look of a very expressive countenance; and when those who have charge of them once impress them with the notion of fear, they easily submit to any thing that is required. The physician, however, should never deceive them in any thing, but more especially with regard to their distemper: for as they are generally conscious of it themselves, they acquire a kind of reverence for those who know it; and by letting them see that he is thoroughly acquainted with their complaint, he may very often gain such an ascendant over them that they will readily follow his directions.

It is a more difficult matter to manage those whose madness is accompanied either with excessive joy or with great dejection and despondency, than those who are agitated with rage: and all that can be done is to endeavour to excite contrary ideas, by repressing the immoderate fits of laughter in the one kind by chiding or threatening (taking care, however, not absolutely to terrify them, which can never be done without danger, and has often added to the misery of the unhappy sufferer); and dispelling the gloomy thoughts in the other, by introducing pleasing concerts of music, or any other species of entertainment which the patients have been known to delight in while they had the use of their reason.

Though blistering the head has generally been directed, Dr Mead says he has oftener found it to do harm than service: but he recommends issues in the back; and advises to keep the head always close shaved, and to wash it from time to time with warm vinegar. Opium has by many been forbidden in maniacal cases, as supposing that it always increases the disturbance; but there are instances where large doses of this medicine have been found to prove a cure, and perhaps if it were tried oftener we should find powerful effects from it: there certainly cannot much harm ensue from a few doses, which may be immediately disused if they should be found to exasperate the disease.

The diet of maniacal patients ought to be perfectly light and thin: their meals should be moderate; but they should never be suffered to live too low, especially while they are under a course of physic: they should be obliged to observe great regularity in their hours: even their amusements should be such as are best suited to their disposition; and after the disease appears to be subdued, chalybeate waters and the cold bath will be highly proper to strengthen their whole frame and secure them against a relapse.

Somnium, *Vog.* 339.

Somnambulismus, *Sauv.* gen. 221. *Lin.* 77. *Sag.*

333.

Hypnobotafis, *Vog.* 340.

Noctambulatio, *Junck.* 124.

Ephialtes, *Sauv.* gen. 138. *Lin.* 163. *Sag.* 245.

Incubus, *Vog.* 221. *Junck.* 50.

The greatest uneasiness which people feel in sleep is that commonly called the *incubus* or *night-mare*. Those seized with it seem to have a weight on their breasts and about their præcordia. Sometimes they imagine they see spectres of various kinds which oppress or threaten them with suffocation. Neither does this uneasiness continue only while they are asleep; for it is some time after they awake before they can turn themselves in their beds or speak; nay, sometimes, though rarely, the distemper has proved mortal. — The incubus rarely seizes people except when the stomach is oppressed with aliments of hard digestion, and the patient lies on his back. It is to be cured by eating light suppers, and raising the head high; or, if it become very troublesome, antispasmodic medicines are to be administered, and the body strengthened by chalybeates. The same method is to be followed by those who are subject to walking in their sleep; a practice which must necessarily be attended with the greatest danger: and somnambulism may justly be considered as merely a different modification of this disease. Accordingly Dr Cullen has distinguished the one by the title of *oneirodynia activa*, and the other by that of *oneirodynia gravans*.

330

CLASS III. CACHEXIÆ.

Cachexiæ, *Sauv.* Class X. *Sag.* Class VIII. *Sag.* Class III.

Deformes, *Lin.* Class X.

331

ORDER I. MARCORES.

Macies, *Sauv.* Class X. Order I. *Sag.* Class III. Order I.

Emaciantes, *Lin.* Class X. Order I.

332

GENUS LXIX. TABES.

WASTING of the Body.

Tabes, *Sauv.* gen. 275. *Lin.* 209. *Vog.* 306. *Sag.* 100.

This disorder is occasioned by the absorption of pus from some ulcer external or internal, which produces an hectic fever. The primary indication therefore must be to heal the ulcer, and thus take away the cause of the disease. If the ulcer cannot be healed, the patient will certainly die in an emaciated state. But the proper treatment of the tabes proceeding from this cause, falls to be considered under the head of *Ulcer* in SURGERY, and likewise under the genera SIPHYLIS, SCROFULA, SCORBUTICS, &c. diseases in which ulcers are least a very common symptom.

Description. This affection consists principally in a wasting of the body, without any remarkable fever, cough, or difficulty of breathing; but attended with want of appetite and a bad digestion, whence the whole body grows languid, and wastes by degrees. — Dr Cullen, however, asserts, that some degree of fever, or at least of increased quickness of the pulse, always attends this disease.

Causes. Sometimes this distemper will come on without any evident cause. Sometimes it will arise from passions of the mind; from an abuse of spirituous liquors; from excessive evacuations, especially of the semen, in which case the distemper hath got the name of *tabes dorsalis*. It may arise from mere old age, or from famine.

Prognosis. This distemper, from whatever cause it may arise, is very difficult to cure, and often terminates in a fatal dropsy.

Cure. The general principles on which the treatment of this disease is to be regulated, very much depend on the cause by which it is induced; and it is unnecessary to add, that this must be removed as far as possible. Next to this, the disease is most effectually combated by the introduction of nutritious aliment into the system, and by obtaining the proper assimilation and digestion of this. With the first of these intentions, recourse must be had to the diet that is most nutritious, and at the same time of easiest digestion. But from the condition of the stomach commonly attending this disease, it is necessary small quantities only should be taken at a time, and that it should be frequently repeated. With the second intention, stomachic and nervous medicines are the articles chiefly at least to be depended upon in this case. The Peruvian bark, elixir of vitriol, and chalybeates, are excellent; and these should be conjoined with gentle exercise, as far as the strength and other circumstances of the patient will admit. In that species of the distemper occasioned by venereal excesses, it is so essentially necessary to abstain from them, that without it the best remedies will prove altogether useless. But this is so seldom complied with, that the *tabes dorsalis* almost always proves mortal.

ORDER II. INTUMESCENTIÆ.

334

Intumescentiæ, *Sauv.* Class X. Ord. II. *Sag.* Class III. Ord. II.

Tumidosi, *Lin.* Class X. Ord. II.

GENUS LXXI. POLYSARCIA.

CORPULENCY.

335

Polysarcia, *Sauv.* gen. 279. *Lin.* 213. *Vog.* 540. *Sag.* 160. *Steatites*, *Vog.* 390.

In a natural and healthy state, the fat, or animal oil, is not allowed to diffuse itself throughout the cellular interstices at large, but is confined to the places where such an oily fluid is necessary, by a particular apparatus of distinct vesicles. But in some constitutions the oily part of the blood appears to exceed the requisite proportion, and easily separates from the other

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constituent parts; or there is an uncommon tendency to the separation of oily matter. In these cases it is apt to accumulate in such quantities, that we may suppose it to burst those vesicles which were originally destined to hinder it from spreading too far; or almost every cell of the membrana adiposa, many of which are in ordinary cases altogether empty, may be completely filled with fat.

The increase of the omentum particularly, and the accumulation of fat about the kidneys and mesentery, swell the abdomen, and obstruct the motions of the diaphragm; whence one reason of the difficulty of breathing which is peculiar to corpulent people; while the heart, and the large vessels connected therewith, are in like manner so encumbered, that neither the systolic nor subsultory motion can be performed with sufficient freedom, whence weakness and slowness of the pulse: but when the whole habit is in a manner overwhelmed with an oily fluid, the enlargement of the cellular interstices will necessarily interrupt the general distribution and circulation throughout the nervous and vascular systems; impeding the action of the muscular fibres, and producing insensibility, somnolency, and death.

These cases are the more deplorable, as there is but little prospect of a cure. For the animal oil is of too gross a nature to be easily taken up by absorption; and we know, that when fluids are accumulated in the cellular system, there are only two ways in which they can be carried off or escape; namely, by the absorbents, which take their rise from the cellular interstices, and through the pores of the skin by transudation.

Another misfortune is, that the disease steals on so imperceptibly, that it becomes inveterate before people begin to think of pursuing the proper means of relief.

In this disease the cure must turn upon two points: First, on preventing the farther deposition of fat, by avoiding the introduction of superfluous aliment, particularly of fatty matters, into the system; and, secondly, on promoting and forwarding the absorption of fat. On these grounds, besides what may be done by proper regimen, a variety of articles have been recommended in the way of medicine.

Soap has been proposed as a remedy to melt down and facilitate the absorption of the fat in corpulent people; and Dr Fleming some years ago published a little treatise, wherein he recommends this medicine, and relates the case of a gentleman who is said to have received considerable benefit from it. But perhaps the soap-leys would be more powerful, and might be more easily taken, sheathed, as directed when recommended as a dissolvent of the stone.

Lieutaud advises to take *acetum scilliticum* in small doses, with frequent purging and brisk exercise. But it will seldom happen that the patients will be found sufficiently steady to persist in any of these courses, it being the nature of the disorder to render them irresolute and inattentive to their condition. Therefore the principal use of rules must be with a view to prevention; and persons who are disposed to corpulency should take care in time to prevent it from becoming an absolute disease, by using a great deal of exercise, not indulging in sleep, and abridging their meals, especially

that of supper. Salted meats are less fattening than such as are fresh; and drinking freely of coffee is recommended to corpulent people.

But Dr Fothergill observes, that a strict adherence to vegetable diet reduces exuberant fat more certainly than any other means that he knows; and gives two cases wherein this regimen succeeded remarkably well. The famous Dr Cheyne brought himself down in this way, from a most unwieldy bulk to a reasonable degree of weight; as he himself informs us. It deserves, however, to be remarked, that every practice for the removal or prevention of fatness must be used with great caution and prudence: for not a few, anxious to prevent this affection, have had recourse to a regimen and to medicine which have proved fatal. This has particularly arisen from the excessive use of acids, probably operating by entirely destroying the action of the chylopoietic viscera.

GENUS LXXII. PNEUMATOSIS.

EMPHYSEMA, or Windy Swelling.

336

Pneumatosis, *Sauv.* gen. 280. *Vog.* 391. *Sag.* 107.
Emphysema, *Sauv.* gen. 13. *Lin.* 288. *Vog.* 392.
Leucophlegmatia, *Lin.* 214.

The emphysema sometimes comes on spontaneously; but more frequently is occasioned by wounds of the lungs, which, giving vent to the air, that fluid insinuates itself into the cellular texture, and often blows it up to a surprising degree. It must be observed, however, that it is only in cases of laceration of the lungs where this disease can take place; for in a simple wound, the effusion of blood always prevents the air from getting out. The cure is to be accomplished by scarifications and compresses; but in some cases only by the paracentesis of the thorax. When air introduced from the lungs is collected in a considerable quantity in the cavity of the thorax, the operation of the paracentesis is perhaps the only means of cure. Upon an opening being thus made, the air sometimes rushes out with incredible violence; and the patient receives at least immediate relief from circumstances the most distressing imaginable. In some instances it is followed even by a complete cure.

GENUS LXXIII. TYMPANITES.

TYMPANY.

337

Tympanites, *Sauv.* gen. 291. *Lin.* 219. *Vog.* 316.
Sag. 118. *Boerb.* 226. *Junck.* 87.
Affectio tympanitica, *Hoffm.* III. 339.
Meteorismus, *Sauv.* gen. 292.

This is an inflation of the abdomen, and is of two kinds: 1. That in which the flatus is contained in the intestines, in which the patient has frequent explosions of wind, with a swelling of the belly frequently unequal. 2. When the flatus is contained in the cavity of the abdomen; in which case the swelling is more equal, and the belly sounds when struck, without any considerable emission of flatus. Of these two, however, the former disease is by much the most common; inasmuch, that many, even extensively engaged in practice, have never met with an instance of true abdominal tympanites. In both cases the rest of the body falls away.

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Causes, &c. The tympany sometimes takes place in those who have been long troubled with flatulencies in the stomach and intestines. It happens frequently to women after abortion; to both sexes after the suppression of the hæmorrhoids; and sometimes from tedious febrile disorders injudiciously treated.

Prognosis. This disease is generally very obstinate, and for the most part proves fatal by degenerating into an ascites. Sometimes, if the patient be healthy and strong, the disease may terminate favourably, and that the more readily if it has followed from some disorder. A hectic consumption, dry cough, and emaciated countenance in a tympany, with a swelling of the feet, denote approaching death in a very short time.

Cure. With a view to the prevention of this affection, it is necessary, in the first place, to avoid, as far as it can be done, causes giving rise to an uncommon extrication of air, by preserving the proper tone of the alimentary canal. After this affection has taken place, the indications are, first, to expel the air already extricated and confined in different cavities; and, secondly, to prevent farther accumulation. On these grounds different remedies are employed. The cure, however, is principally attempted by carminative, resolvent, and stomachic medicines, gentle laxatives, and at last tonics, especially chalybeates. In the Edinburgh Medical Essays, Vol. I. we have a very remarkable history of a tympany by Dr. Monro senior. The patient was a young woman of 22 years of age, who fell into the distemper after having a tertian ague, in which she was badly treated. She became a patient in the Edinburgh Infirmary the 24th of March 1730; took several purgatives; and some doses of calomel; used the warm bath; and had an antihysterical plaster applied over the whole belly, but with very little effect. She was monstrously distended, inasmuch that the skin seemed to be in danger of bursting: her breathing was much straitened; but the swelling sometimes gradually decreased without any evacuation. The returns and degree of this swelling were very uncertain; and when the belly was most detumefied, several unequal and protuberant balls could be felt over the whole abdomen, but especially at its sides. Her stomach was good, she had no thirst, and her urine was in proportion to the quantity she drank. She was very costive, had her menses at irregular periods, but no œdematous swellings appeared in the feet or any where else. In this situation she continued from the time of her admission till the 21st of June, during which interval she had only her menses twice. Throughout this space of time, the following circumstances were observed, 1. Several times, upon the falling of the swelling, she complained of a headach; once of pains throughout all her body, once of a giddiness, twice of a nausea and vomiting, and the last time threw up green bile; and once her stomach swelled greatly, whilst the rest of the abdomen subsided. 2. During the flowing of the menses she did not swell, but became very big upon their stopping. 3. Blood-letting and emetics, which were made use of for some accidental urgent symptoms, had no very sensible effect in making the tympany either better or worse. 4. She never had passage of wind either way, except a little

belching some days before the first monthly evacuation.

Some time before the last eruption of the menses, the purgatives were given more sparingly; and antihysterics of the strongest kinds, such as asafœtida, oleum corn. cerv. &c. mixed with soap, were given in large doses, accompanied with the hotter antiscorbutics as they are called, as horse-radish and ginger-root infused in strong-ale with steel. The patient was ordered to use frequent and strong frictions to all the trunk of her body and extremities, and to use moderate exercise. Immediately before the menstrua began to flow, clysters of the same kind of medicines were injected. The menses were in sufficient quantity; but as soon as they ceased, her belly increased in its circumference four inches and a half, but soon subsided. She then complained of pains, which a gentle sweat carried off. Borborygmi were for the first time observed on the same day, June 25th; and having taken some *tinctura sacra* at night, she passed a small quantity of blood next day by stool. This was the first appearance of the return of the hæmorrhoids, to which she had been formerly subject.

The two following days her saponaceous, antihysterical, and antiscorbutic medicines being still continued, she had such explosions of wind upwards and downwards, that none of the other patients would remain in the same room, nay scarce on the same floor with her. Her belly became less and softer than it had been from the first attack of the disease; her medicines, with a dose of syrup of buckthorn at proper intervals, still were continued, only the proportion of steel was increased; her flatulent discharge went on successfully, and she gradually recovered her former health.

GENUS LXXIV. PHYSOMETRA. WINDY SWELLING of the Uterus.

338

Physometra, *Sauv.* gen. 290. *Sag.* 119.
Hysterophyse, *Vog.* 317.

THE treatment of this is not different from that of the tympany. It is however, upon the whole, a very rare disease; and when it takes place, very seldom if ever admits of a cure.

GENUS LXXV. ANASARCA. WATERY SWELLING over the Whole Body.

339

Anasarca, *Sauv.* gen. 281. *Lin.* 215. *Vog.* 313.
Sag. 108. *Boerh.* 1225. *Hoffm.* III. 322. *Junck.* 87. *Monro* on the Dropsy. *Millman* *Animadversiones de hydropse* 1779.
Phlegmatia, *Sauv.* gen. 282.
Angina aquosa, *Boerh.* 791.

In this disease the feet first begin to swell, especially in the evening, after exercise, and when the patient has stood or sat long; which swelling rises frequently to the thighs. By lying in bed, the swelling becomes less, or even almost disappears. In the progress of the disease, the swelling often rises to the hips, loins, and belly, and at last covers the whole body. This disease, besides the other symptoms afterwards mentioned under ASCITES, is attended with a remarkable

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able difficulty of breathing. In the cure of this, as well as other species of dropsy, the general intentions are, first, the evacuation of the water already effused either by natural or artificial outlets; and, secondly, the prevention of it from accumulation, which is chiefly to be expected from supporting a due action of the absorbents, and from keeping up a proper discharge by the serous excretories.

The remedies employed with these intentions are much the same with what are employed against the more important genus of ascites. Only it may be here noticed, that in anasarca it is usual to scarify the feet and legs. By this means the water is often discharged: but the operator must be cautious not to make the incision too deep; they ought barely to penetrate through the skin; and especial care must be taken, by spirituous fomentations and proper digestives, to prevent a gangrene. Dr Fothergill observes, that the safest and most efficacious way of making these drains is by the instrument used for cupping, called a *scarificator*; and he always orders it to be so applied as to make the little wounds transversely; as they not only discharge better, but are also longer in healing, than when made longitudinally.

Notwithstanding every precaution, however, gangrene will often ensue; and it is upon the whole a much safer practice to evacuate the water by the natural outlets, the valvular lymphatic absorbents; and with this intention emetics and cathartics, but particularly diuretics, are often employed with success.

340

GENUS LXXVI. HYDROCEPHALUS.

WATER in the HEAD.

Hydrocephalus, *Sauv.* gen. 285. *Lin.* 216. *Boerb.* 1217.

Hydrocephalum, *Vog.* 384.

THIS differs from the hydrocephalus formerly treated of at some length under the title of Apoplexia Hydrocephalica, chiefly in the water being collected in the external parts of the head, whereas the former is entirely within the skull. In the fifth volume of the Medical Observations we have an account of a very extraordinary case of this kind. The patient was a child only of a few days old, and had a tumor on his head about the size of a common tea-cup, which had the appearance of a bladder distended with water; near the apex was a small opening, through which a bloody serum was discharged. In other respects the child was healthy. No application was used but a piece of linen dipt in brandy. The tumor continued to increase for many months; at the end of which time the membrane containing the water appeared equally thick with the other part of the scalp, except one place about the size of a shilling, which continued thin, and at times appeared as if it would burst. He continued in this situation for about 17 months, when the circumference of the head was 20 inches, the base $16\frac{1}{2}$, the middle $18\frac{1}{2}$, and from the base to the apex near $8\frac{1}{2}$. The water was then drawn off, and the child died in two days. Almost all other cases of this distemper have proved fatal; the sutures of the skull generally give way, and the whole external part of the head is equally enlarged; but in the instance just now given

N^o 208.

there was a deficiency of part of the bones. Although, however, in some instances where the head is thus enlarged to an enormous size, the water is exterior to the brain, and therefore intitled to the appellation of hydrocephalus exterior, yet much more frequently in those instances where there is a manifest separation of the bones of the cranium at the sutures, the water is still contained within the ventricles; and accordingly the disease may be much more properly distinguished into the *acute* and *chronic* hydrocephalus, than as is commonly done into the *internal* and *external*. Although the latter be much slower in its progress, sometimes subsisting even for years, yet it is equally difficult of cure with the former, and very often it proves fatal in a few days if the water be drawn off by an artificial opening, which may be very easily performed by a mere puncture with a common lancet, without either pain or any immediate hazard from the operation itself, although the water be lodged in the ventricles; for these are distended to an enormous size, and the substance of the brain almost totally destroyed, so that hardly any thing is to be punctured but membranes.

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GENUS LXXVII. HYDRORACHITIS.

SPINA BIFIDA.

341

Hydrorachitis, *Sauv.* gen. 287. *Mongagn.* de sed.

XII. 9. *et seq.*

Spinola, *Lin.* 289.

Spina bifida, *Vog.* 386.

This disease, which consists in a soft tumor on the lumbar vertebræ, attended with a separation of the vertebræ themselves, though generally considered as approaching to the nature of rachitis, is commonly referred to the article SURGERY, which may be consulted with regard to this affection.

GENUS LXXVIII. HYDROTHORAX.

DROPSY of the BREAST.

342

Hydrothorax, *Sauv.* gen. 150. *Vog.* 311. *Boerb.* 1219.

This affection, particularly with respect to its causes, is in many circumstances similar to other kinds of dropsy, particularly to ascites. But from the situation of the water which is here deposited in the cavity of the thorax, it may naturally be supposed that some peculiar symptoms will occur. Besides the common symptoms of dropsy, paleness of the countenance, scarcity of urine, and the like, this disease is, in some instances, attended with a fluctuation of water within the breast; which when it does occur may be considered as a certain distinguishing mark of this affection. But besides this, it is also distinguished by the remarkable affections of circulation and respiration with which it is attended.

The breathing is peculiarly difficult, especially in a recumbent posture; and in many instances patients cannot breath with tolerable ease, unless when sitting erect, or even stooping somewhat forwards. The pulse is very irregular, and has often remarkable intermissions. But the disease has been thought to be principally characterized by a sudden starting from sleep, in consequence of an almost inexpressible uneasy sensation

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referred to the breast, and attended with strong palpitation, which may probably arise from an affection either of circulation or of respiration.

That these symptoms are common attendants of this disease, is undeniable; and they are certainly the best characteristics of this affection with which we are yet acquainted: but it must be allowed that they are present in some cases where there is no water in the breast; and that in other instances where the disease exists, they are either altogether wanting, or occur only to a very slight degree. Certain diagnostics, therefore, of this disease still remain to be discovered.

When hydrothorax is present from the affection of the vital functions with which it is attended, it may readily be concluded that it is a dangerous disease, and in many instances it proves fatal. The cure, as far as it can be accomplished, is obtained very much on the same principles as in other dropsies. Here, however, probably from the uncertainty of the diagnostics, the artificial abstraction of water, by paracentesis of the thorax, is less frequently had recourse to than in ascites; though in some instances, after other means have failed, it has been said not only to give relief of symptoms highly urgent, particularly dyspnoea, but even to produce a complete cure. Benefit is often obtained from an artificial discharge of water by the application of blisters to the breast: but in this, as well as other dropsies, a discharge is chiefly effected by the natural outlets, particularly from the use of cathartics and diuretics. In this species of dropsy, more perhaps than in any other, recourse has been had to the use of the digitalis purpurea, or fox-glove, so strongly recommended as a diuretic by Dr Withering in his Treatise respecting the use of it. There can be no doubt that this article, tho' sometimes productive of inconvenience from the distressing sickness and severe vomiting which it not unfrequently excites though used even but in small doses, often operates as a powerful diuretic, and produces a complete evacuation of water, after other articles have failed. From the effects mentioned above, however, as well as from its influence on the pulse, which it renders much slower, it is necessary that it should be employed with great caution and in small doses. A dram of the dried leaves of the digitalis, macerated for four hours in half a pint of warm water, forms an infusion which may be given in doses of an ounce, and the dried powder of the leaves in doses of one or two grains: these doses may be gradually increased, and repeated twice or oftener in the day; but this requires to be done with great caution, lest severe vomiting, or other distressing symptoms, should take place.

343

GENUS LXXIX. ASCITES.

DROPSY of the ABDOMEN.

Ascites, Sauv. gen. 288. Lin. 217. Vog. 314.

Sag. gen. 115. Boerb. 1226. Hoffm. III. 322.

Junck. 87. D. Monro on the Dropsy, 1765.

Milman, Animadversiones de Hydrope, 1779.

Description. This disease assumes three different forms: 1. When the water immediately washes the intestines. 2. When it is interposed between the abdominal muscles and peritonæum; or, 3. When it is con-

tained in sacs and hollow vesicles; in which case it is called the *encysted dropsy*. Some physicians of great reputation have asserted, that the water was often placed within the duplicature of the peritonæum: but this is alleged by Dr Milman to be a mistake, as that membrane is looked upon by the best anatomists to be single; and he thinks that the abovementioned physicians have been led into this error from observing the water collected in the cellular substance of the peritonæum.

In the beginning of an ascites the patient becomes languid, breathless, and has an aversion at motion: his belly swells; and when struck, the sound of fluctuating water is perceptible; there is a difficulty of breathing when the belly is pressed. There is an almost continual thirst, which in the progress of the disease becomes very urgent; the urine is thick, in small quantity, and red. The pulse is small and frequent; and as the belly swells, the other parts waste away. A fever at last arises, which, constantly increasing, in the end carries off the patient. These symptoms are most urgent where the waters are in immediate contact with the intestines; in the other kinds the rest of the body is less wasted; nor is there so great thirst or difficulty of breathing.

Causes, &c. The immediate cause of dropsy is a greater effusion of serum by the exhalant arteries than the absorbents take up. This may be occasioned either by too great a quantity of liquid thrown out by the former, or by an inability of the latter to perform their office. This commonly happens in people whose bodies are of a weak and lax texture, and hence women are more subject to this malady than men; chlorotic girls especially are very apt to become dropical.

Sometimes, however, this disease is occasioned by a debility of the vital powers, by great evacuations of blood, or by acute diseases accidentally protracted beyond their usual period; and although this cause seems very different from a laxity of fibres, yet the dropsy seems to be produced in a similar manner by both. For the vital powers being debilitated by either of these causes, naturally bring on a certain debility and laxity of the solids; and on the other hand a debility of the solids always brings on a debility of the vital powers; and from this debility of the vital powers in both cases it happens, that those humours which ought to be expelled from the body are not, but accumulate by degrees in its cavities. There is, however, this difference between the two kinds of dropsy arising from these two different causes, That in the one which arises from laxity the solid parts are more injured than in that which arises from a debility of the vital powers. In the former, therefore, the water seems to flow out from every quarter, and the body swells all over. But when the disease is occasioned by a debility of the vital powers, though the solids be less damaged, yet the power of the heart being much diminished, and the humours scarce propelled through the extreme vessels, the thin liquids, by which in a healthy state the body is daily recruited, are carried by their own weight either into the cavities or into the cellular texture. Hence those aqueous effusions which follow great evacuations of blood, or vio-

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lent loosenesses, begin in the more depending parts of the body, gradually ascending, till they arrive at the cavity of the abdomen, or even the thorax.

But another and much more sufficient cause for the production of dropfy is an obstruction of the circulation; and this may take place from polypi in the heart or large vessels, and hard swellings in the abdomen. Instances have been observed of a dropfy arising from steatomatous tumors in the omentum, and many more from a scirrhus liver or spleen, and from an infarction and obstruction of the mesenteric glands, by which means the lymph coming from the extremities is prevented from arriving at the heart. Scirrhus of the liver, the most common cause of ascites, probably operates by augmenting effusion in consequence of its preventing the return of the venous blood, the greater part of the veins from the abdomen going to the formation of the vena portarum.

Lastly, whatever, either within or without the vessels, contracts or shuts up their cavities, produces a more copious and easy transmission of the thin humours through the exhalant arteries, at the same time that it prevents their return by the absorbent veins. This has been established by experiment. For Lower having perforated the right side of the thorax in a dog, tied the *vena cava*, and sewed up the wound. The animal languished for a few hours, and then died. On dissection, a great quantity of serum was found in the abdomen, as if he had long laboured under an ascites. In like manner, having tied the jugular veins of another dog, a surprising swelling took place in those parts above the ligatures, and in two days the creature died. On dissection, all the muscles and glands were vastly distended, and quite pellucid, with limpid serum. From these experiments, and some cases of the disease mentioned by different authors, it appears, that when the veins are obstructed so that they cannot receive the arterial blood, the serum is separated as by a filtre into the more open cavities and laxer parts of the body, while the thicker part stagnates and is collected in the proper blood-vessels.

The too great tenuity of the humours is very frequently accused as the cause of dropfy, and many authors have asserted that dropfy might arise merely from a superabundance of water in the blood. For this some experiments are quoted, from which they would infer, that when a great quantity of aqueous fluid is introduced into the blood, the superfluous fluid ought by no means to pass through the extremities of the sanguiferous arteries into the veins in the common course of circulation, but by being effused into the cavities should produce a dropfy. But this can only happen when the vital powers are very much diminished; for, in a natural state, the superfluous quantity is immediately thrown out by the skin or the kidneys: and agreeable to this we have an experiment of Schultzius, who induced a dropfy in a dog by causing him drink a great quantity of water; but he had first bled him almost *ad deliquium*, so that the vital powers were in a manner oppressed by the deluge of water. In this manner do those become hydropic who are seized with the disease on drinking large quantities of water either when wearied with labour, or weakened by some kinds of diseases. Dr Fothergill relates an instance of a

person who, being advised to drink plentifully of barley-water, in order to remove a fever, rashly drunk 12 pounds of that liquor every day for a month, and thus fell into an almost incurable distemper. But if this quantity had been taken only during the prevalence of the fever, he would in all probability have suffered no inconvenience, as is probable from what has been related concerning the *diata aquea* used by the Italians.

It is moreover evident from experiments, that, in a healthy state, not only water is not deposited in the cavities, but that if it is injected into them it will be absorbed, unless some laxity of the solids has already taken place. Dr Musgrave injected into the right side of the thorax of a dog four ounces of warm water; whence a difficulty of breathing and weakness immediately followed. But these symptoms continually lessened, and in the space of a week the animal seemed to be in as good health as before. Afterwards he injected 16 ounces of warm water into the left cavity of the thorax in the same dog; the same effects followed, together with great heat, and strong pulsation of the heart; but he again recovered in the space of a week. Lastly, he injected 18 ounces of water into one side of the thorax, and only six into the other: the same symptoms followed, but vanished in a much shorter time; for within five days the dog was restored to perfect health. During this time, however, he observed that the creature made a greater quantity of urine than usual.

The remote causes of dropfy are many and various. Whatever relaxes the solids in such a manner as to give an occasion of accumulation to the serous fluids, disposes to the dropfy. A lazy indolent life, rainy wet weather, swampy or low soil, and every thing which conduces to vitiate the viscera, or insensibly to produce obstructions in them, paves the way for a dropfy. Hence those are ready to fall into the disease who use hard and viscid aliments, such as poor people in some countries who use coarse brown bread, and children who are fed with unwholesome aliments; and the same thing happens to those who drink immoderately of spirituous liquors.

Prognosis. When the dropfy arises from a scirrhus of the liver or spleen, or any of the other viscera, the prognosis must always be unfavourable, and also when it arises from disorders of the lungs. Neither is the case more favourable to those in whom the small vessels are ruptured, and pour out their liquids into the cavity of the abdomen. Those certainly die who have polypi in the vessels, or tumors compressing the veins and vessels of the abdomen. A dropfy arising from obstructions in the mesenteric glands is likewise difficult to cure, whether such obstructions arise from a bad habit of body, or from any other cause; if we can, however, by any means remove the disease of the glands, the dropfy easily ceases. But in those who fall into dropfy without any disease preceding, it is not quite so dangerous; and even though a disease has preceded, if the patient's strength be not greatly weakened, if the respiration be free, and the person be not affected with any particular pain, we may entertain great hopes of a cure. But where a great loss of blood is followed by a fever, and that by a dropfy, the patients almost always die, and that

Ascites.

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that in a short time: those, however, are very frequently cured who fall into this disease without any preceding hæmorrhagy.

Cure. In the cure of this disease authors chiefly mention two indications. 1. To expel the superfluous quantity of water; and, 2. To prevent its being again collected. But before we proceed to speak of the remedies, it is necessary to take notice, that by the animal-economy, if a great evacuation of a fluid takes place in any part of the body, all the other fluids in the body are directed towards that part, and those which lie as it were lurking in different parts will be immediately absorbed, and thrown out by the same passage. Hence the humours which in hydropic persons are extravasated into the different cavities of the body will be thrown into the intestines, and evacuated by purgatives; or by diuretics will be thrown upon the kidneys, and evacuated by urine. It is, however, not only necessary to excite these evacuations in order to remove this malady, but they must be assiduously promoted and kept up till the abundant humour is totally expelled. For this reason Sydenham has advised purgatives to be administered every day, unless, either through the too great weakness of the body, or the violent operation of the purgative, it shall be necessary to interpose a day or two now and then; because if any considerable intervals be allowed to take place between the exhibition of the purgatives, an opportunity is given to the waters of collecting again. In this method, however, there is the following inconvenience, that, when the waters are totally evacuated, the strength is at the same time so much exhausted, that the distemper commonly returns in a very short time. Hence almost our only hopes of curing a dropsy consist in gently evacuating the waters by means of diuretics. But the efficacy of these is generally very doubtful. Dr Friend hath long ago observed, that this part of medicine is of all others the most lame and imperfect; but a French physician, Mr Bacher, lately discovered, as he alleges, a method of making the diuretics much more successful. His reputation became at last so great, that the French king thought proper to purchase his secret for a great sum of money. The basis of his medicine was hellebore-root, the malignant qualities of which he pretended to correct in the following manner. A quantity of the dried roots of black hellebore were pounded, and then put into a glazed earthen vessel, and afterwards sprinkled with spirit of wine. They were suffered to stand for twelve hours, stirring them about twice or thrice during that space of time. They were then sprinkled again, and at last good Rhenish wine was poured on till it stood six fingers above the roots. The mixture was frequently agitated with a wooden spatula; and as the wine was imbibed by the roots, more was poured on, so as to keep it always at the same height for 48 hours. The whole was then put on the fire and boiled for half an hour, after which the decoction was violently pressed out; the same quantity of wine was added as at first, and the mixture boiled as before. After the second expression the woody residuum was thrown away as useless. Both the strained liquors are then mixed together with two parts of boiling water to one of the decoction. The whole is after-

Ascites.

wards evaporated in a silver vessel to the consistence of a syrup. One part of the extract is again added with two parts of boiling water, and the whole inspissated as before.—By this means, says he, the volatile nauseous acrid particles are separated by evaporation, and the fixed ones remain corrected and prepared for medicinal uses; adding, towards the end, a ninth part of old brandy, and evaporating to the consistence of turpentine. Mr Bacher reasons a good deal on the way in which this process corrects the medicine; but tells us, that notwithstanding the improvement, his pills will not have the desired effect unless properly made up. For forming them, they ought to be mixed with matters both of an inviscating and indurating nature; yet so prepared that it will be readily soluble in the stomach, even of a person already debilitated. For answering these purposes, he chose myrrh and carduus benedictus, and then gives the following receipt for the formation of his pills

“Take of the extract of hellebore prepared as above directed, and of solution of myrrh, each one ounce; of powdered carduus benedictus three drachms, and a scruple. Mix them together, and form into a mass, dividing it into pills of a grain and an half each.” To these pills Mr Bacher gives the name of the *pilule tonice*, from an idea, that while they evacuate the water, they at the same time act as tonics; and thus from augmenting the action of the lymphatics, prevent the return of the disease. And if both these intentions could be effectually answered by the use of the same remedy, it would unquestionably be of great importance in practice.

The effects of these pills were, we are told, very surprising. Dr Daignan relates, that he gave them to 18 hydropic patients at once; and these he divided into three classes, according to the degree of the disease with which they were affected. The first class contained those who laboured under an anasarca following intermittent fevers. The second class contained those who had an anasarca, together with some degree of ascites, arising from tedious febrile disorders. All these were cured; but these two classes consisted of such cases as are most easily removed. But the third contained six who were seized with a most violent anasarca and ascites, after being much weakened by tedious disorders, and of consequence in whom the disease was very difficult to be cured. Even of these, however, four were cured, and the other two died. The body of one of these being dissected, both sides of the cavity of the thorax were found to be full of a blackish-red water. The lungs were unsound; there was a poly-pous concretion in the right ventricle of the heart; the liver and spleen were hard, and of a preternatural bulk; and the glands of the mesentery were obstructed and infarcted. In the other, the liver and pancreas were scirrhus, and the spleen very hard.

The same medicines were given by De Horne to eight persons, six of whom had both an anasarca and ascites, but the other two only an ascites. Four of these recovered; three died without being freed from the dropsy; one in whom the dropsy was cured died in a short time after, having for some time before his death become speechless.

By these patients 10 of the pills were taken at once; and

Intume-
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and the same dose repeated to the third time, with an interval of an hour betwixt each dose. At first they proved purgative, and then diuretic; by which last evacuation they finally cured the disease. But though Mr Bacher was firmly of opinion that his pills cured the dropsy by reason of the above-related correction; yet it is certain that, in the hands of other practitioners, these very pills have failed, unless they also made use of the same regimen recommended by that physician; while, on the other hand, it is also certain, that different medicines will prove equally efficacious in dropical cases, provided this regimen is made use of.

For a great number of ages it has been recommended to dropical patients to abstain as much as possible from drink, and thus to the torments of their disease was added that of an intolerable thirst; and how great this torment was, we may understand from an example of a friend of king Antigonus, who, having been closely watched both by order of the physicians and also of the king, was so unable to bear the raging thirst occasioned by his disease, that he swallowed his own excrements and urine, and thus speedily put an end to his life. Dr Milman shows at great length the pernicious tendency of this practice. He maintains that it is quite contrary to the sentiments of Hippocrates and the best ancient physicians. He asserts, that unless plenty of diluting drink be given, the best diuretics can have no effect. He condemns also in the strongest terms the practice of giving dropical patients only dry, hard, and indigestible aliments. These would oppress the stomach even of the most healthy; and how much more must they do so to those who are already debilitated by labouring under a tedious disorder? By what means also are these aliments to be dissolved in the stomach when drink is withheld? In this disease the saliva is viscid, and in small quantity; from whence it may be reasonably conjectured, that the rest of the fluids are of the same nature, and the gastric juices likewise depraved. Thus the aliments lie long in the stomach; and if the viscera were formerly free of obstructions, they are now generated; the strength fails; perspiration and other excretions are obstructed; the viscid and pituitous humours produced by these kinds of food float about the præcordia, and increase the disease, while the surface of the body becomes quite dry. Nay, so much does this kind of diet conspire with the disease, that 100 pounds of fluid will sometimes be imbibed in a few days by hydropic persons who take no drink. Even in health, if the body from any cause becomes dry, or deprived of a considerable part of its juices, as by hunger, labour, &c. it will imbibe a considerable quantity of moisture from the air; so that we must impute the abovementioned extraordinary inhalation, in part at least, to the denial of drink, and to the nature of the aliment given to the sick. The following is the account given by Dr Milman of his practice in the Middlesex hospital.

If the patient be not very much debilitated, he is sometimes treated with the purging waters, and a dose of jalap and calomel alternately. On the intermediate days he gets a saline mixture, with 40 or 60 drops of *acetum scilliticum* every sixth hour; drinking with the purgatives oat-gruel and some thin broths. That he might the better ascertain what share the liquids given

along with the medicines had in producing a copious flow of urine, he sometimes gave the medicines in the beginning of the distemper without allowing the drink: but though the swellings were usually diminished a little by the purgatives, the urine still continued scanty, and the patients were greatly weakened. Fearing, therefore, lest, by following this course, the strength of the sick might be too much reduced, he then began his course of diuretic medicines, giving large quantities of barley-water with a little *sal diureticus*; by which means, sometimes in the short space of 48 hours after the course was begun, the urine flowed out in very large quantity: but as saline drinks are very disagreeable to the taste, a drink was composed purposely for hydropic persons, of half an ounce of cream of tartar dissolved in two pounds of barley-water, made agreeably sweet with syrup, adding one or two ounces of French brandy.

To this composition Dr Milman was induced by the great praises given to cream of tartar by some physicians in hydropic cases. In the *Acta Bononiensis*, 15 cases of hydropic patients are narrated who were cured only by taking half an ounce of cream of tartar daily. But it is remarkable, that by these very patients the cream of tartar was taken for 20, 30, nay 40 days, often without any perceptible effect; yet when dissolved in a large quantity of water, it showed its salutary effects frequently within as many hours, by producing a plentiful flow of urine. This liquor is now the common drink of hydropic patients in the hospital abovementioned, of which they drink at pleasure along with their medicines.

Among purgative medicines Dr Milman recommends the *radix senekæ*; but says the decoction of it, according to the Edinburgh Pharmacopœia, is too strong, as he always found it excite vomiting when prepared as there directed, and thus greatly to distress the patients: but when only half an ounce or six drachms of the root are used to a pound of decoction, instead of a whole ounce as directed by the Edinburgh college, he finds it an excellent remedy; and though it may sometimes induce a little vomiting, and frequently a nausea, yet it seldom failed to procure nine or ten stools a-day, and sometimes also proved diuretic. But we must take care not to be too free in the use of *senekæ*, or any other purgative, if the patients be very weak; and therefore, after having used purgatives for some time, it will be proper to depend upon diuretics entirely for perfecting the cure; and of the success of this method our author gives some very remarkable instances. But he observes, that after the dropsy is removed, the patients will sometimes die without any evident cause; and of this it is proper that the physicians should be aware. It is remarkable with what ease a flux of urine is induced in those who have a scirrhus liver; while on the other hand, in one who had the mesenteric glands obstructed, along with a scirrhus of the liver and vitiated state of the lungs, the most powerful diuretics proved ineffectual. In some cases Dr Milman thinks the kidneys may be so pressed with the weight of the water, as to be unable to perform their office. With regard, however, to diuretics in general, it may be remarked, that the operation of none of them can be certainly depended upon. In particular constitutions, and at particular times, one will be

Ascites.

Rachitis, *Sauv.* gen. 294. *Lin.* 212. *Vog.* 312. 347
Sag. gen. 120. *Boerb.* 1480. *Hoffm.* III. 487.
Zeviani della Rachitide. *Glisson* de Rachitide.

Description. This is one of the diseases peculiar to infancy. It seldom attacks children till they are nine months, nor after they are two years old; but it frequently happens in the intermediate space between these two periods. The disease shows itself by a flaccid tumor of the head and face, a loose flabby skin, a swelling of the abdomen, and falling away of the other parts, especially of the muscles. There are protuberances of the epiphyses of the joints; the jugular veins swell, while the rest decrease; and the legs grow crooked. If the child has begun to walk before he be seized with this disease, there is a slowness, debility, and tottering in his motion, which soon brings on a constant desire of sitting, and afterwards of lying down; insomuch that nothing at last is moveable but the neck and head. As they grow older, the head is greatly enlarged, with ample futures; the thorax is compressed on the sides, and the sternum rises up sharp, while the extremities of the ribs are knotty. The abdomen is protuberant, and the teeth black and carious. In such patients as have died of this disease, all the solids appear soft and flaccid, and the fluids dissolved and mucous.

Causes. The rickets may proceed from scrofulous or venereal taints in the parents, and may be increased by those of the nurse. It is likewise promoted by feeding the child with aqueous and mucous substances, crude summer-fruits, fish, unleavened farinaceous aliment, and too great a quantity of sweet things.— Sometimes it follows intermittent fevers and chronic disorders; and in short, is caused by any thing which tends to debilitate the body, and induce a viscid and unhealthy state of the juices.

Prognosis. The rickets do not usually prove fatal by themselves, but if not cured in time, they make the person throughout life deformed in various ways; and often produce very pernicious disorders, such as carious bones in different parts of the body.

Cure. This is to be effected by mild cathartics, alteratives, and tonics, such as are used in other diseases attended with a debility of the system and a vitiated state of the blood and juices. In the Western Islands of Scotland, the medicine used for the cure of the rickets is an oil extracted from the liver of the skate-fish. The method of application is as follows: First, the wrists and ankles are rubbed with the oil in the evening: this immediately raises a fever of several hours duration. When the fever from the first rubbing subsides, the same parts are rubbed again the night following; and repeatedly as long as the rubbing of these parts continues to excite the fever.— When no fever can be excited by rubbing the wrists and ankles alone, they are rubbed again along with the knees and elbows. This increased unction brings on the fever again; and is practised as before, till it no longer has that effect. Then the vertebræ and sides are rubbed, along with the former parts; and this

Intume-
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be observed to succeed, after another, though commonly much more powerful, has been tried in vain. Accordingly various articles of this kind are often used in succession. Recourse is particularly often had to the roots of taraxacum, of colchicum, and of squills; the latter, especially when combined with calomel, is often found to be a very powerful diuretic. And indeed mercury in different forms, probably from acting as a deobstruent, is often of very great use in dropical complaints. Among other diuretics, the lactuca virosa has of late been highly extolled by Dr Collins of Vienna, and the nicotiana tabaccum by Dr Fowler of York: but neither has been extensively introduced into practice, although we have known some instances in which the latter has been used with great advantage.

The water having been drawn off, we are to put the patient on a course of strengtheners; such as the Peruvian bark, with some of the warm aromatics, and a due proportion of rhubarb infused in wine and chalybeates. Gentle exercise, and frictions on the belly, with such a course of diet as shall be light and nourishing, are also to be enjoined: and it may be observed, that the use of tonic medicines is by no means to be delayed till a complete evacuation of the water can be obtained. On the contrary, by alternating, and even combining the use of evacuants and tonics, the influence of both is often very much promoted.

When the patient can by no other means be relieved, the operation of paracentesis must be had recourse to, which is described under the article SURGERY.

344

GENUS LXXX. HYDROMETRA.

DROPSY of the Uterus.

Hydrometra, *Sauv.* gen. 289. *Sag.* 116. *Boerb.* 1224.

345

GENUS LXXXI. HYDROCELE.

DROPSY of the Scrotum.

Oschecele, *Sauv.* gen. 41. *Vog.* 388.

Oscheophyma, *Sag.* 44.

Hydops scroti, *Vog.* 389.

Hydops testium, *Boerb.* 1227.

For the treatment of these two diseases, we may refer the reader to what has already been said of other species of dropsy, particularly ascites. But both are chiefly to be combated by chirurgical operation, especially the latter, in which it seldom fails to produce a complete cure.

GENUS LXXXII. PHYSCONIA.

SWELLING of the Belly.

Physconia, *Sauv.* gen. 283. *Vog.* 325. *Sag.* gen. 110.

Hypofarca, *Lin.* 218.

This disease may arise from a variety of causes, as from a swelling of the liver, spleen, kidneys, uterus, omentum, ovarium, mesentery, intestines, &c. and sometimes it arises merely from fat. In the former cases, as the viscera are generally scirrhus and indurated, the distemper is for the most part incurable; neither is the prospect much better where the disease is occasioned by a great quantity of fat.

Intume-
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this unction, which again brings on the fever, is repeated as the former. When no fever can be any longer excited by this unction, a flannel-shirt dipped in the oil is put upon the body of the patient: this brings on a more violent and sensible fever than any of the former unctions; and is continued till the cure be completed, which it commonly is in a short time.

A German physician, Dr Strack, has lately published a paper, in which he recommends the filings of iron as a certain remedy in the rickets. This disease, he observes, in general begins with children when they are about 16 months old. It is seldom observed with children before they be one year old, and seldom attacks them after they pass two; and it is very generally worse where it begins early than where it begins late.

For effecting a cure, it is, he affirms, a matter of the utmost consequence to be able to distinguish, very early, whether a child will be afflicted with rickets or not. And this, he assures us, may be determined by the following symptoms: Paleness and swelling of the countenance; and in that part of the cheeks which should naturally be red, a yellow colour approaching to that of sulphur. When that is the case, he directs that a medicine should be immediately had recourse to which will retard the further progress of the disease and remove what has already taken place. For this purpose, he advises that five grains of the filings of iron, and as much rhubarb, should be rubbed up with ten grains of sugar, and given for a dose every morning fasting, and every evening an hour before supper. But if considerable looseness should be produced, it will be necessary, at first, to persist in the use of one dose only every day.

After a month's continuance in this course, according to Dr Strack, there in general ensues a keen appetite for food, quick digestion, and a copious flow of urine; by means of which the fulness of the face and yellowness of the complexion are by degrees removed, while the natural colour of the countenance and firmness of the body in general are gradually restored. This practice, he assures us, has never failed of success in any one instance; not even in those children born of parents greatly afflicted with the rickets.

In addition to the use of chalybeates, great benefit is often also obtained in this disease from the use of the cold bath; which, under prudent administration, is perhaps one of the most effectual remedies for this complaint with which we are yet acquainted.

When the bones of rickety children begin to bend, they may sometimes be restored to their natural shape by compresses, bolsters, and proper supports. See the article SURGERY.

ORDER III. IMPETIGINES.

Impetigines, *Sauv.* Cl. X. Ord. V. *Sag.* Cl. III. Ord. V.

GENUS LXXXIV. SCROFULA.

KING'S-EVIL.

Scrofula, *Sauv.* gen. 285. *Vog.* 367. *Sag.* 121. *Struma, Lin.* 284.

Description. This disease shows itself by hard, scir-

rhous, and often indolent tumors, which arise by degrees in the glands of the neck, under the chin, armpits, and different parts of the body, but most commonly in the neck, and behind the ears. In process of time, the cellular substance, ligaments of the joints, and even the bones themselves, are affected. In scrofula the swellings are much more moveable than those of the scirrhus kind; they are generally softer, and seldom attended with much pain; they are tedious in coming to suppuration; are very apt to disappear suddenly, and again to rise in some other part of the body. We may likewise mention as characteristic circumstances of this disease, a remarkable softness of the skin, a kind of fulness of the face, generally with large eyes, and a very delicate complexion.

Causes. A variety of causes have been mentioned as tending to produce scrofula; viz. a crude indigestible food; bad water; living in damp, low situations; its being an hereditary disease, and in some countries endemic, &c. But whatever may in different circumstances be the exciting or predisposing causes of the scrofula, the disease itself either depends upon, or is at least much connected with, a debility of the constitution in general, and probably of the lymphatic system in particular, the complaint always showing itself by some affections of the latter. And that debility has at least a considerable influence in its production is probable, not only from the manifest nature of some of the causes said to be productive of scrofula, but likewise from such remedies as are found most serviceable in the cure, which are all of a tonic invigorating nature.

Prognosis. The scrofula is a distemper which often eludes the most powerful medicines, and therefore physicians cannot with any certainty promise a cure. It is seldom, however, that it proves mortal in a short time, unless it attacks the internal parts, such as the lungs, where it frequently produces tubercles that bring on a fatal consumption. When it attacks the joints, it frequently produces ulcers, which continue for a long time, and gradually waste the patient; while in the mean time the bones become foul and corroded, and death ensues after a long scene of misery. The prognosis in this respect must be regulated entirely by the nature of the symptoms.

Cure. It was long supposed that scrofula depended upon an acid acrimony of the fluids; and this, it is probable, gave rise to the use of burnt sponge, different kinds of soap, and other alkaline substances, as the best remedies for acidity. But although a sourness of the stomach and *primæ viæ* does no doubt frequently occur in these complaints, yet this symptom seems to be entirely the consequence of that general relaxation which in scrofula so universally prevails, and which does not render it in the least necessary to suppose a general acescency of the fluids to take place; as the one very frequently, it is well known, even in other complaints, occurs without the least suspicion of any acid acrimony existing in the other. This is also rendered very probable from the indolent nature of scrofulous tumors, which have been known to subsist for years without giving any uneasiness; which could not have been the case, if an acid, or any other acrimony, had prevailed in them.

In the treatment of scrofula, different morbid conditions,

Impetigines ditions, existing in different parts, require, according to circumstances, various means of cure: but, upon the whole, the remedies directed may be considered as used with a view either to the tumors, to the ulcerations, or to the general state of the system.

Gentle mercurials are sometimes of use as resolvents in scrofulous swellings; but nothing has such considerable influence as a frequent and copious use of Peruvian bark. Cold bathing too, especially in the sea, together with frequent moderate exercise, is often of singular service here; as is likewise change of air, especially to a warm climate.

In the scrofulous inflammation of the eyes, or ophthalmia strumosa, the Peruvian bark has also been given with extraordinary advantage: and we meet with an instance of its having cured the gutta rosacea in the face; a complaint which it is often difficult to remove, and which is extremely disagreeable to the fair sex.

From the various cases related of tumefied glands, it appears, that when the habit is relaxed and the circulation weak, either from constitution or accident, the bark is a most efficacious medicine, and that it acts as a resolvent and discutient. It will not, however, succeed in all cases; but there are few in which a trial can be attended with much detriment. Dr Fothergill observes, that he has never known it avail much where the bones were affected, nor where the scrofulous tumor was so situated as to be accompanied with much pain, as in the joints, or under the membranous coverings of the muscles; for when the disease attacks those parts, the periosteum seldom escapes without some injury, by which the bone will of course be likewise affected. Here the Peruvian bark is of no effect: instead of lessening, it rather increases the fever that accompanies those circumstances: and, if it do not really aggravate the complaint, it seems at least to accelerate the progress of the disease.

Various are the modes in which the bark is administered: Dr Fothergill makes use of a decoction, with the addition of some aromatic ingredients and a small quantity of liquorice-root, as a form in which a sufficient quantity may be given without exciting disgust. But where it is easily retained in the stomach in substance, perhaps the best form of exhibiting it is that of powder; and in this state it is often advantageously conjoined with powder of cicuta, an article possessing very great deobstruent powers.

The powder, however, soon becomes disagreeable to very young patients; and the extract seems not so much to be depended upon as may have been imagined. In making the extract, it is exposed to so much heat, as must have some effect upon its virtues, perhaps to their detriment. In administering it, likewise, if great care be not taken to mix it intimately with a proper vehicle, or some very soluble substance, in weak bowels it very often purges, and thereby not only disappoints the physician, but injures the patient. A small quantity of the *cortex Winteranus* added gives the medicine a grateful warmth; and a little liquorice, a few raisins, gum arabic, or the like, added to the decoction before it be taken from the fire, by making the liquor viscid enables it to suspend more of the fine particles of the bark; by which process the medicine is not only improved in efficacy, but at the same time rendered less disagreeable.

In indolent swellings of the glands from viscid humours, sea-water also has been strongly recommended by Dr Ruffel.

Dr Fothergill also acquaints us, that the cicuta even by itself is not without a considerable share of efficacy in removing scrofulous disorders. He mentions the case of a gentlewoman, about 28 years of age, afflicted from her infancy with scrofulous complaints, severe ophthalmies, glandular swellings, &c. cured by the *extractum cicuta* taken constantly for the space of a year. He observes, however, that when given to children even in very small doses, it is apt to produce spasmodic affections; for which reason he rarely exhibits it to them when very young, or even to adults of very irritable habits.

Dr Fothergill gives several other instances of the success of cicuta in scrofulous cases, and even in one which seemed to be not far removed from a confirmed phthisis; but owns that it seldom had such good effects afterwards: yet he is of opinion, that where there are symptoms of tubercles forming, a strumous habit, and a tendency to phthisis, the cicuta will often be serviceable. It is anodyne, corrects acrimony, and promotes the formation of good matter. With regard to the quality of the medicine, he observes, that the extract prepared from hemlock before the plant arrives at maturity, is much inferior to that which is made when the hemlock has acquired its full vigour, and is rather on the verge of decline: just when the flowers fade, the rudiments of the seeds become observable, and the habit of the plant inclines to yellow. This, he thinks, is the proper time to collect the hemlock. It has then had the full benefit of the summer heat; and the plants that grow in exposed places will generally be found more active than those that grow in the shade. The less heat it undergoes during the preparation, the better. Therefore, if a considerable quantity of the dry powder of the plant gathered at a proper season be added, less boiling will be necessary, and the medicine will be the more efficacious. But let the extract be prepared in what manner soever it may, provided it be made from the genuine plant, at a proper season, and be not destroyed by boiling, the chief difference observable in using it is, that a larger quantity of one kind is required to produce a certain effect than of another. Twenty grains of one sort of extract have been found equal in point of efficacy to thirty, nay near forty, of another; yet both of them made from the genuine plant, and most probably prepared with equal fidelity. To prevent the inconveniences arising from this uncertainty, it seems always expedient to begin with small doses, and proceed step by step till the extract produces certain effects, which seldom fail to arise from a full dose. These effects are different in different constitutions. But, for the most part, a giddiness affecting the head, and motions of the eyes as if something pushed them outwards, are first felt; a slight sickness, and trembling agitation of the body; a laxative stool or two. One or all these symptoms are the marks of a full dose, let the quantity in weight be what it will. Here we must stop till none of these effects be felt; and in three or four days advance a few grains more. For it has been supposed by most of those who have used this medicine to any good purpose, that the cicuta seldom procures

Scrofula.

Inpetigine any benefit, though given for a long time, unless in as large a dose as the patient can bear without suffering any of the inconveniences above mentioned. There is, however, reason to believe, that its effects as a discutient are in no degree dependent on its narcotic powers: and we are inclined to think, that recourse is often had to larger doses than are necessary; or at least that the same benefit might be derived from smaller ones continued for an equal length of time.

Patients commonly bear a greater quantity of the extract at night than at noon, and at noon than in the morning. Two drachms may be divided into thirty pills. Adults begin with two in the morning, two at noon, and three or four at night, with directions to increase each dose, by the addition of a pill to each, as they can bear it.

But after all, the best form under which the cicuta can, we think, be exhibited, is that of powder from the leaves. This, either in a state of powder or made into pills, may be given at first to the extent of four or five grains, and the dose gradually rising till it amount to 15 or 20 grains twice or thrice a day. Given to this extent, particularly when conjoined with the Peruvian bark, it has often been found of great service in scrofulous cases. At the same time it must be allowed, that such patients, after resisting every mode of cure, will have in some instances a spontaneous recovery in the progress of life, probably from the system acquiring additional vigour.

350

GENUS LXXV. SYPHILIS.

LUES VENEREA, or French Pox.

Syphilis, *Sauv. gen.* 3086. *Lin.* 6. *Vog.* 319. *Sag.* 126.

Lues venerea, *Boerb.* 1440. *Hoffm.* III. 413. *Junck.* 96. *Astruc* de lue Venerea.

Dr Astruc, who writes a very accurate history of the lues venerea, is fully convinced that it is a new disease, which never appeared in Europe till some time between the years 1494 and 1496, having been imported from America by the companions of Christopher Columbus; though this opinion is not without its opponents. Dr Sanches in particular has contended with much learning and ability, that it appeared in Europe at an earlier period: But it is at least certain, that it was altogether unknown to the medical practitioners of Greece and Rome, and that it was a very common disease in America when the Europeans first visited that country. But at whatever period it may have been introduced into Europe, or from whatever source it may have been obtained, there can be no doubt that, as well as small-pox or measles, syphilis depends on a peculiar specific contagion; on a matter *sui generis* which is alone capable of inducing this disease.

The venereal infection, however, cannot, like the contagious miasmata of the small-pox and some other diseases, be carried through the air, and thus spread from place to place: for unless it is transmitted from the parents to the children, there is no other way of contracting the disease but from actual contact with the infectious matter. Thus, when a nurse happens to labour under the disease, the infant that she suckles will receive the infection; as, on the other hand, when the child is infected, the nurse is liable to receive it;

N^o 208.

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and there have even been instances known of lying-in women being infected very violently, from having employed a person to draw their breasts who happened to have venereal ulcers in the throat. It may be caught by touching venereal sores if the cuticle be abraded or torn; and in this way accoucheurs and midwives have sometimes been infected severely. Dr Macbride says, the most inveterate pox he ever saw was caught by a midwife, who happened to have a whitelaw on one of her fingers when she delivered a woman ill of the lues venerea.

But by far the most ready way of contracting this disease is by coition, the genital parts being much more bibulous than the rest of the body. When the disorder is communicated, the places where the morbid matter enters are generally those where it first makes its appearance; and as coition is the most usual way of contracting it, so the first symptoms commonly appear on or near the pudenda.

The patient's own account will, for the most part, help us to distinguish the disease: but there are sometimes cases wherein we cannot avail ourselves of this information, and where, instead of confessing, the parties shall conceal all circumstances; while, on the other hand, there are now and then people to be met with, who persuade themselves that symptoms are venereal, which in reality are owing to some other cause; and therefore it is of the utmost importance to inform ourselves thoroughly of the nature of those symptoms and appearances which may be considered as pathognomic signs of lues venerea.

In the first place, when we find that the local symptoms, such as chancres, buboes, phymosis, and the like, do not give way to the usual methods; or when these complaints, after having been cured, break out again without a fresh infection; we may justly suspect that the virus has entered the whole mass of fluids: but if at the same time ulcers break out in the throat, and the face is deformed by callous tubercles, covered with a brown or yellow scab, we may be assured that the case is now become a confirmed lues, which will require a mercurial course.

When eruptions of the furfuraceous and superficial kind are venereal, they are not attended with itching; and the scale being picked off, the skin appears of a reddish brown, or rather copper-colour, underneath; whereas leprous eruptions are itchy, throw off a greater quantity of scales, and rise in greater blotches, especially about the joints of the knees and elbows. Venereal tubercles or pustules are easily distinguished from carbuncles of the face, by not occupying the cheeks or the nose, nor as having a purulent apex, but are covered at top, either with a dry branny scurf like the superficial eruptions just now mentioned, or else with a hard dry scab of a tawney yellow hue; they particularly break out among the hair or near to it, on the forehead or on the temples.

Venereal ulcers affecting the mouth are distinguishable from those which are scorbutic in the following manner: 1. Venereal ulcers first affect the tonsils, fauces, and uvula; then the gums, but these very rarely; on the contrary, scorbutic ulcers affect the gums first of all; then the fauces, tonsils, and uvula. 2. Venereal ulcers frequently spread to the nose; scorbutic ones almost never. 3. Venereal ulcers are callous in the

Impetigines the edges; scorbutic ones are not so. 4. Venereal ulcers are circumscribed, and, for the most part, are circular, at least they are confined to certain places; scorbutic ones are of a more irregular form, spread wider, and frequently affect the whole mouth. 5. Venereal ulcers are for the most part hollow, and generally covered at bottom with a white or yellow slough; but scorbutic ones are more apt to grow up into loose fungi. 6. Venereal ulcers are red in their circumference, but scorbutic ones are always livid. 7. Venereal ulcers frequently rot the subjacent bones, the scorbutic ones seldom or never. 8. And lastly, Venereal ulcers are most combined with other symptoms which are known to be venereal; scorbutic ones with the distinguishing signs of the scurvy, such as difficult breathing, listlessness, swelling of the legs, rotten gums, &c.

Another sure sign of the confirmed lues is often afforded from certain deep-seated nocturnal pains, particularly of the shins, arms, and head. As for any superficial wandering pains that have no fixed seat, and which affect the membranes of the muscles and ligaments of the joints, they, for the most part, will be found to belong to the gout or rheumatism, and can never be considered as venereal unless accompanied with some other evident signs; but with regard to the pains that are deeply seated, and always fixed to the same place, and which affect the middle and more solid part of the ulna, tibia, and bones of the cranium, and rage chiefly and with greatest violence in the fore-part of the night, so that the patient can get no rest till morning approaches, these may serve to convince us that the disease has spread itself throughout the whole habit, whether they be accompanied with other symptoms of the lues or not. *Gummata* in the fleshy parts, *nodes* in the periosteum, *ganglia* upon the tendons, *tophi* upon the ligaments, *exostoses* upon the bones, and *fici* at the verge of the anus, are all of them signs of the confirmed lues: these are hard indolent swellings; but as they sometimes arise independently of any venereal infection, and perhaps may proceed from a scrofulous taint, unless they be accompanied or have been preceded by some of the more certain and evident symptoms of the lues, we must be cautious about pronouncing them venereal. When these swellings are not owing to the syphilitic virus, they are very seldom painful, or tend to inflame and suppurate; whereas those that are venereal usually do, and if they lie upon a bone generally bring on a caries.

These carious ulcers are most commonly met with upon the ulna, tibia, and bones of the cranium; and when accompanied with nocturnal pains, we can never hesitate about declaring their genuine nature. Frequent abortions, or the exclusion of scabby, ulcerated, half-rotten, and dead fetuses, happening without any manifest cause to disturb the fetus before its time, or to destroy it in the womb, may be reckoned as a sure sign that at least one of the parents is infected.

These then are the principal and most evident signs of the confirmed lues. There are others which are more equivocal, and which, unless we can fairly trace them back to some that are more certain, cannot be held as signs of the venereal disease: Such are, 1. Obstinate inflammations of the eyes, frequently returning with

VOL. XI. Part I.

great heat, itching, and ulceration of the eye-lids. 2. A singing and hissing noise in the ears, with ulcers or caries in the bones of the meatus auditorius. 3. Obstinate head-achs. 4. Obstinate cutaneous eruptions, of the itchy or leprous appearance, not yielding to the milder methods of treatment. 5. Swellings of the bones; and, 6. Wandering and obstinate pains. None of these symptoms, however, can be known to be venereal, except they happen to coincide with some one or other of the more certain signs.

It may, perhaps, be considered as a singularity in this disease, that the diagnosis is often more difficult in the advanced than in the early periods of the affection. That is, with those who have been certainly subjected to syphilis, it is often very difficult to say whether certain symptoms, remaining after the ordinary modes of cure have been employed, be syphilitic or not. Very frequently, as appears from the sequel, nocturnal pains, ulcerations, and the like, remaining after a long course of mercury has been employed, are in no degree of a venereal nature, but are in reality to be considered as consequences rather of the remedy than of the disease; and are accordingly best removed by nourishing diet, gentle exercise, and tonics. But as long as any symptoms of any kind remain, it is often impossible to convince some patients that they are cured; and it is often impossible for a physician with certainty to affirm that the disease is altogether overcome.

Upon the whole, we are first to distinguish and consider the several symptoms apart; and then, by comparing them with each other, a clear judgment may be formed upon the general review.

Prognosis. Being thoroughly convinced that the case is venereal, we are to consider, first of all, whether it be of a longer or shorter date; for the more recent it is, it will, *ceteris paribus*, be less difficult to remove. But there are other circumstances which will assist us in forming a prognostic as to the event. As,

1. The age of the patient. This disorder is more dangerous to infants and old people than to such as are in the flower and vigour of life, in whom some part of the virus may be expelled by exercise, or may be subdued in some degree by the strength of the constitution.

2. The sex. Though women are for the most part weaker than men, and therefore should seem less able to resist the force of any disease, yet experience shows that this is easier borne by them than by men; perhaps owing to the menstrual and other uterine discharges, by which a good share of the virus may be carried off immediately from the parts where it was first applied; for it is observable, that whenever these discharges are obstructed, or cease by the ordinary course of nature, all the symptoms of this disease grow worse.

3. The habit of body. Persons who have acrid juices will be liable to suffer more from the venereal poison than such as have their blood in a milder state; hence, when people of a scorbutic or scrofulous habit contract venereal disorders, the symptoms are always remarkably violent, and difficult to cure. And for the same reasons, the confirmed lues is much more to be dreaded in a person already inclined to an asthma, phthisis, dropsy, gout, or any other chronic distemper.

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Syphilis.

Impetigines per, than in one of a sound and healthy constitution. For as the original disease is increased by the accession of the venereal poison, so the lues is aggravated by being joined to an old disorder. The more numerous the symptoms, and the more they affect the bones, the more difficult the cure. Of all combinations the union of syphilis with scrofula is perhaps the most difficult to overcome: but if the acrimony should seize on the nobler internal parts, such as the brain, the lungs, or the liver, then the disease becomes incurable, and the patient will either go off suddenly in an apoplectic fit or sink under a consumption.

Cure. Viewing this disease as depending on a peculiar contagious matter introduced into the system, and multiplied there, it is possible to conceive that a cure may be obtained on one of three principles; either by the evacuation of the matter from the system, by the destruction of its activity, or by counteracting its influence in the system. It is not impossible that articles exist in nature capable of removing this complaint on each of these grounds: but we may venture at least to assert, that few such are yet discovered. Notwithstanding numbers of pretended infallible remedies for syphilis, mercury is perhaps the only article on which dependence is placed among European practitioners; and with regard to its mode of operation, all the three different opinions pointed out have been adopted and supported by different theorists.— But although many ingenious arguments have been employed in support of each, we are, upon the whole, inclined to think it more probable that mercury operates by destroying the activity of the venereal virus, than that it has effect either by evacuating it, or by exciting a state of action, by which its influence is counteracted. Some practitioners have affirmed, that the disease may be totally extirpated without the use of mercury: but, excepting in slight cases, it appears from the most accurate observations, that this grand specific is indispensable; whether it be introduced through the pores of the skin, in the form of ointments, plasters, washes, &c.; or given by the mouth, disguised in the different shapes of pills, troches, powders, or solutions.

Formerly it was held as a rule, that a salivation ought to be raised, and a great discharge excited. But this is now found to be unnecessary: for as mercury probably acts by some specific power in subduing and correcting the venereal virus, all that is required is to throw in a sufficient quantity of the medicine for this purpose; and if it can be diverted from the salivary glands so much the better, since the inconveniences attending a spitting are such as we should always wish to avoid.

Mercury, when combined with any saline substance, has its activity prodigiously increased; hence the great variety of chemical preparations which have been contrived to unite it with different acids.

Corrosive sublimate is one of the most active of all the mercurial preparations, inasmuch as to become a poison even in very small doses. It therefore cannot safely be given in substance; but must be dissolved in order to render it capable of a more minute division. We may see, by looking into Wiseman, that this is an old medicine, though seldom given by regular practi-

tioners. How it came to be introduced into so remote a part of the world as Siberia, is not easily found out; but Dr Clerc, author of the *Histoire Naturelle de l'Homme Malade*, assures us, that the sublimate solution has been of use there time out of mind.

It appears to have been totally forgotten in other places, until of late years, when the Baron Van Swieten brought it into vogue; so that at one period, if we credit Dr Locher, they used no other mercurial preparation at Vienna. The number of patients cured by this remedy alone in the hospital of St Mark, which is under the care of this gentleman, from 1754 to 1761 inclusive, being 4880.

The way to prepare the solution is, to dissolve as much sublimate in any kind of ardent spirit (at Vienna they use only corn-brandy) as will give half a grain to an ounce of solution. The dose to a grown person is one spoonful mixed with a pint of any light ptilan or barley-water, and this to be taken morning and evening: the patients should keep mostly in a warm chamber, and lie in bed to sweat after taking the medicine: their diet should be light; and they ought to drink plentifully throughout the day, of whey, ptilan, or barley-water. If the solution does not keep the belly open, a mild purge must be given from time to time; for Locher observes, that those whom it purges two or three times a-day, get well sooner than those whom it does not purge: he also says, that it very seldom affects the mouth, but that it promotes the urinary and cutaneous discharges. This course is not only to be continued till all the symptoms disappear, but for some weeks longer. The shortest time in which Locher used to let the patients out was six weeks; and they were continued on a course of decoction of the woods for some weeks after they left off the solution.

This method has been introduced both in Britain and Ireland, though by no means to the exclusion of others; but it appears, that the solution does not turn out so infallible a remedy, either in these kingdoms, or in France, as they say it has done in Germany. It was seldom if ever found to perform a radical cure, and the frequent use of it proved in many cases highly prejudicial. It has therefore been succeeded in practice, even at Vienna, by mercury exhibited in other forms; and, among these, by a remedy first recommended by Dr Plenck, and since improved by Dr Saunders; consisting of mercury united with mucilage of gum arabic, which is said to render its exhibition perfectly mild and safe. For particulars, we refer to Dr Saunders's treatise.

But a late French writer, supposed to be Dr Petit, in a small book, intitled *A parallel of the different methods of treating the venereal disease*, insists, that there is neither certainty nor safety in any other method than the repeated frictions with mercurial ointment.

If therefore it is determined to have recourse to the mercurial frictions, the patient may with advantage be prepared by going into the warm bath some days successively; having been previously bled if of a plethoric habit, and taking a dose or two of some proper cathartic.

The patient being fitted with the necessary apparatus of flannels, is then to enter on the course.

If

Impetigines If the person be of a robust habit, and in the prime of life, we may begin with two drachms of the *unguentum hydrargyri fortius*, (Ph. Lond.) which is to be rubbed in about the ankles by an assistant whose hands are covered with bladders: then having intermitted a day, we may expend two drachms more of the ointment, and rest for two days; after which, if no soreness of the mouth comes on, use only one drachm; and at every subsequent friction ascend till the ointment shall reach the trunk of the body; after which the rubbings are to be begun at the wrists, and from thence gradually extended to the shoulders. In order to prevent the mercury from laying too much hold of the mouth, it must be diverted to the skin, by keeping the patient in a constant perspiration from the warmth of the room, and by drinking plentifully of barley-water, whey, or ptisan; but if, nevertheless, the mercury should tend to raise a spitting, then, from time to time, we are either to give some gentle cathartic, or order the patient into a vapour or warm bath; and thus we are to go on, rubbing in a drachm of the ointment every second, third, or fourth night, according as it may be found to operate; and on the intermediate days either purging or bathing, unless we should choose to let the salivation come on; which, however, it is much better to avoid, as we shall thus be able to throw in a larger quantity of mercury.

It is impossible to ascertain the quantity of mercury that may be necessary to be rubbed in, as this will vary according to circumstances; but we are always to continue the frictions for a fortnight at least, after all symptoms of the disease shall have totally disappeared; and when we have done with the mercury, warm bathing, and sudorific decoctions of the woods, are to be continued for some time longer.

This is a general sketch of the methods of treatment for the confirmed lues; but for a complete history of the disease, and for ample directions in every situation, we refer to Astruc, and his abridger Dr Chapman.—We have to add, however, that a method of curing this disease by fumigation has been lately recommended in France; but it seems not to meet with great encouragement. One of the most recent proposals for the cure of the venereal disease is that of Mr Clare, and consists in rubbing a small quantity of mercury under the form of *mercurius muriatus mitis*, or *calomel* as it is commonly called, on the inside of the cheek; by which means it has been supposed that we will not only avoid the inconveniences of unction, but also the purgative effects that are often produced by this medicine when taken into the stomach. But after all, the introduction of mercury under the form of unction, as recommended by the latest and best writers in Britain on the venereal disease, Dr Swediaur, Mr John Hunter, and others, is still very generally preferred in Britain to any mode that has yet been proposed.

Where, after a long trial of mercury, distressing symptoms still remain, particularly obstinate ulcerations and severe pains, benefit has often been derived from the use of opium: but there is little reason to believe, as has been held by some, that of itself it affords an infallible cure of this disease; at least we are inclined to think, that all the facts hitherto brought

in support of the cure of syphilis by opium are at the utmost very doubtful. Syp h i l i s.

In obstinate ulcerations, remaining probably after the venereal virus has been overcome, and resisting the use of mercury, a complete cure has in many instances been obtained from the use of the root of the mezereon, the daphne mezereum of Linnæus. This article has been chiefly employed under the form of decoction; and it now appears that it is the basis of an article at one time highly celebrated in venereal complaints, under the title of *Lisbon diet-drink*. But, upon the whole, these sequelæ of this disease are perhaps more readily overcome by country air, gentle exercise, and nourishing diet, particularly a milk diet, than by the use of any medicine whatever. It must indeed be allowed, that for combating different sequelæ, various practices accommodated to the nature of these will on particular occasions be requisite. But into the consideration of these we cannot here propose to enter.

Genus LXXXVI. SCORBUS.

SCURVY.

351

Scorbutus, *Sauv.* gen. 391. *Lin.* 223. *Vog.* 318.*Sag.* 127. *Boerb.* 1148. *Hofm.* III. 369.*Junc.* 91. *Lind* on the Scurvy. *Hulme* de Scorbuto. *Roupe* de morbis Navigantium.

Description. The first indication of the scorbutic diathesis is generally a change of colour in the face, from the natural and healthy look to a pale and bloated complexion, with a listlessness, and aversion from every sort of exercise; the gums soon after become itchy, swell, and are apt to bleed on the slightest touch; the breath grows offensive; and the gums, swelling daily more and more, turn livid, and at length become extremely fungous and putrid, as being continually in contact with the external air; which in every case favours the putrefaction of substances disposed to run into that state, and is indeed absolutely requisite for the production of actual rottenness.

The symptoms of the scurvy, like those of every other disease, are somewhat different in different subjects, according to the various circumstances of constitution; and they do not always proceed in the same regular course in every patient. But what is very remarkable in this disease, notwithstanding the various and immense load of distress under which the patients labour, there is no sickness at the stomach, the appetite keeps up, and the senses remain entire almost to the very last: when lying at rest, they make no complaints, and feel little distress or pain; but the moment they attempt to rise or stir themselves, then the breathing becomes difficult, with a kind of straitness or catching, and great oppression, and sometimes they have been known to fall into a syncope. This catching of the breath upon motion, with the loss of strength, dejection of spirit, and rotten gums, are held as the essential or distinguishing symptoms of the disease. The skin is generally dry, except in the very last stage, when the patients become exceedingly subject to faintings, and then it grows clammy and moist: in some it has an asnerine appearance; but much oftener it is smooth and shining; and, when examined, is found to be spread over with spots not rising above the surface, of a redish, bluish, livid, or purple colour, with

Impetigines a sort of yellow rim round them. At first these spots are for the most part small, but in time they increase to large blotches. The legs and thighs are the places where they are principally seen; more rarely on the head and face. Many have a swelling of the legs, which is harder, and retains the impression of the finger longer than the common dropical or truly cedematous swellings. The slightest wounds and bruises, in scorbutic habits, degenerate into foul and untoward ulcers. And the appearance of these ulcers is so singular and uniform, that they are easily distinguished from all others. Scorbutic ulcers afford no good digestion, but give out a thin and fetid ichor mixed with blood, which at length has the appearance of coagulated gore lying caked on the surface of the sore, not to be separated or wiped off without some difficulty. The flesh underneath these sloughs feels to the probe soft and spongy, and is very putrid. Neither detergents nor escharotics are here of any service; for though such sloughs be with great pains taken away, they are found again at the next dressing, where the same sanguineous putrid appearance always presents itself. Their edges are generally of a livid colour, and puffed up with excrescences of proud flesh arising from below the skin. As the violence of the disease increases, the ulcers shoot out a soft bloody fungus, which often rises in a night's time to a monstrous size; and although destroyed by cauteries, actual or potential, or cut away with the knife, is found at next dressing as large as ever. It is a considerable time, however, before these ulcers, bad as they are, come to affect the bones with rottenness—These appearances will always serve to assure us that an ulcer is scorbutic; and should put us on our guard with respect to the giving mercurials, which are the most pernicious things that can be administered in these cases.

Scorbutic people, as the disease advances, are seldom free from pains; though they have not the same seat in all, and often in the same person shift their place. Some complain of universal pain in all their bones; but most violent in the limbs, and especially the joints: the most frequent seat of their pain, however, is some part of the breast. The pains of this disease seem to arise from the distraction of the sensible fibres by the extravasated blood being forced into the interstices of the periosteum and of the tendinous and ligamentous parts; whose texture being so firm, the fibres are liable to higher degrees of tension, and consequently of pain.

The states of the bowels are various: in some there is an obstinate costiveness; in others a tendency to a flux, with extremely fetid stools: the urine is also rank and fetid, generally high-coloured; and, when it has stood for some hours, throws up an oily scum on the surface. The pulse is variable; but most commonly slower and more feeble than in the time of perfect health. A stiffness in the tendons, and weakness in the joints of the knees, appear early in the disease: but as it grows more inveterate, the patients generally lose the use of their limbs altogether; having a contraction of the flexor-tendons in the ham, with a swelling and pain in the joint of the knee. Some have their legs monstrously swelled, and covered over with livid spots or ecchymoses; others have had tumors there; some, though without swelling, have the calves of the legs

and the flesh of the thighs quite indurated. As persons far gone in the scurvy are apt to faint, and even expire, on being moved and brought out into the fresh air, the utmost care and circumspection are requisite when it is necessary to stir or remove them.

Scorbutic patients are at all times, but more especially as the disease advances, extremely subject to profuse bleedings from different parts of the body; as from the nose, gums, intestines, lungs, &c. and likewise from their ulcers, which generally bleed plentifully if the fungus be cut away. It is not easy to conceive a more dismal and diversified scene of misery than what is beheld in the third and last stage of this distemper; it being then that the anomalous and more extraordinary symptoms appear, such as the bursting out of old wounds, and the dissolution of old fractures that have been long united.

Causes. The term *scurvy* has been indiscriminately applied, even by physicians, to almost all the different kinds of cutaneous foulness; owing to some writers of the last century, who comprehended such a variety of symptoms under this denomination, that there are few chronic distempers which may not be so called, according to their scheme: but the disease here meant is the true putrid scurvy, so often fatal to seamen, and to people pent up in garrisons without sufficient supplies of sound animal-food and fresh vegetables; or which is sometimes known to be endemic in certain countries, where the nature of the soil, the general state of the atmosphere, and the common course of diet, all combine in producing that singular species of corruption in the mass of blood, which constitutes this disease; for the appearances, on dissecting scorbutic subjects, sufficiently show that the scurvy may, with great propriety, be termed a disease of the blood.

Dr Lind has, in a postscript to the third edition of his treatise on the scurvy, given the result of his observations drawn from the dissection of a considerable number of victims to this fatal malady, from which it appears that that true scorbutic state, in an advanced stage of the distemper, consists in numerous effusions of blood into the cellular interstices of most parts of the body, superficial as well as internal; particularly the gums and the legs; the texture of the former being almost entirely cellular, and the generally dependent state of the latter rendering these parts, of all others in the whole body, the most apt to receive, and retain the stagnant blood, when its crisis comes to be destroyed; and it loses that glutinous quality which, during health, hinders it from escaping through the pores in the coats of the blood-vessels or through exhalant extremities.

A dropical indisposition, especially in the legs and breast, was frequently, but not always, observed in the subjects that were opened, and the pericardium was sometimes found distended with water: the water thus collected was often so sharp as to shrivel the hands of the dissector; and in some instances, where the skin happened to be broken, it irritated and festered the wound.

The fleshy fibres were found so extremely lax and tender, and the bellies of the muscles in the legs and thighs so stuffed with the effused stagnating blood, that it was always difficult, and sometimes impossible,

Impetigines to raise or separate one muscle from another. He says that the quantity of this effused blood was amazing; in some bodies it seemed that almost a fourth part of the whole mass had escaped from the vessels; and it often lay in large concretions on the periosteum, and in some few instances under this membrane immediately on the bone. And yet, notwithstanding this dissolved and depraved state of the external fleshy parts, the brain always appeared perfectly sound, and the viscera of the abdomen, as well as those in the thorax, were in general found quite uncorrupted. There were spots indeed, from extravasated blood, observed on the mesentery, intestines, stomach, and omentum; but these spots were firm, and free from any mortified taint; and, more than once, an effusion of blood, as large as a hand's breadth, has been seen on the surface of the stomach; and what was remarkable, that very subject was not known while living to have made any complaint of sickness, pain, or other disorder, in either stomach or bowels.

These circumstances and appearances, with many others that are not here enumerated, all prove to a demonstration a putrescent, or at least a highly depraved state of the blood: and yet Dr Lind takes no small pains to combat the idea of the scurvy's proceeding from animal putrefaction; a notion which, according to him, "may, and hath misled physicians to propose and administer remedies for it altogether ineffectual."

He also, in the preface to his third edition, talks of the mischief done by an attachment to delusive theories. He says, "it is not probable that a remedy for the scurvy will ever be discovered from a preconceived hypothesis, or by speculative men in the closet, who have never seen the disease, or who have seen at most only a few cases of it;" and adds, "that though a few partial facts and observations may, for a little, flatter with hopes of greater success, yet more enlarged experience must ever evince the fallacy of all positive assertions in the healing art."

Sir John Pringle, however, is of a very different opinion. He "is persuaded, after long reflection, and the opportunities he has had of conversing with those who to much sagacity had joined no small experience in nautical practice, that upon an examination of the several articles which have either been of old approved, or have of late been introduced into the navy, it will appear, that though these means may vary in form and in mode of operating, yet they all some way contribute towards preventing putrefaction; whether of the air in the cloister parts of a ship, of the meats, of the water, of the clothes and bedding, or of the body itself."

What Dr Lind has above advanced is the more remarkable, as, in the two former editions of his book, he embraced the hypothesis of animal-putrefaction being the cause of the scurvy; and if these effusions of blood, from a destruction of its crasis and the dissolved state of the muscular fibres, together with the rotten condition of the mouth and gums, do not betray putrescency, it is hard to say what does, or what other name we shall bestow on this peculiar species of depravation which constitutes the scurvy.

The blood, no doubt, derives its healthy properties, and maintains them, from the due supplies of whole-

some food; while the insoluble, superfluous, effete, and acrid parts, are carried off by the several discharges of stool, urine, and perspiration. Scorbutus.

Our senses of taste and smell are sufficient to inform us when our food is in a state of soundness and sweetness, and consequently wholesome; but it is from chemistry that we must learn the principles on which these qualities chiefly depend.

Experiments of various kinds have proved, that the soundness of animal and vegetable substances depends very much, if not entirely, on the presence of their aerial principle; since rottenness is never observed to take place without an emission of fixed air from the putrefying substance: and even when putrefaction has made a considerable progress, if aerial acid can be transferred, in sufficient quantity, from some other substance in a state of effervescence or fermentation, into the putrid body, the offensive smell of this will be destroyed; and if it be a bit of rotten flesh with which the experiment is made, the firmness of its fibres will be found in some measure restored.

The experiments of Dr Hales, as well as many others made since his time, show that an aerial principle is greatly connected with, and remarkably abundant in, the gelatinous parts of animal bodies, and in the mucilage or farina of vegetables. But these are the parts of our food which are most particularly nutritive; and Dr Cullen, whose opinion on this as on every other medical subject must be allowed of the greatest weight, affirms, in his *Lectures on the Materia Medica*, that the substances on which we feed are nutritious only in proportion to the quantities of oil and sugar which they respectively contain. This oil and sugar are blended together in the gelatinous part of our animal-food, and in the mucilaginous and farinaceous part of esculent vegetables; and, while thus intimately combined, are not perceivable by our taste, though very capable of being developed and rendered distinct by the power of the digestive organs; for in consequence of the changes produced during digestion, the oily and the saccharine matter become manifest to our senses, as we may see and taste in the milk of animals, which is chiefly chyle a little advanced in its progress toward sanguification; the oil is observed to separate spontaneously, and from which a quantity of actual sugar may be obtained by a very simple process.

Thus much being premised, we can now readily comprehend how the blood may come to lose those qualities of smoothness, mildness, and tenacity, which are natural to it. For if, in the first place, the fluids, and organs subservient to digestion should be so far disordered or debilitated that the nutritious parts of the food cannot be properly developed, the blood must be defrauded of its due supplies; which will also be the case if the aliment should not originally contain enough of oily and saccharine matter, or should be so circumstanced, from being dried or salted, as to hinder the ready extrication of the nutritious parts; or lastly, if the natural discharges should be interrupted or suspended, so that the superfluous, acrid, and effete fluids are retained in the general mass; in all these instances the blood must of necessity run into proportionate degrees of depravation.

And hence we may understand how it may possibly happen.

Impetigines happen, that when persons are greatly weakened by some preceding disorder, and at the same time debarred the use of proper bodily exercise, the scorbutic diathesis should take place, even though they enjoy the advantages of pure air and wholesome diet. But these are solitary cases, and very rarely seen; for whenever the scurvy seizes numbers, and can be considered as an epidemic disease, it will be found to depend on a combination of the major part, or perhaps all, of the following circumstances:

1. A moist atmosphere, and more especially if cold be joined to this moisture.
2. Too long cessation from bodily exercise, whether it be from constraint, or a lazy slothful disposition.
3. Dejection of mind.
4. Neglect of cleanliness, and want of sufficient cloathing.
5. Want of wholesome drink, either of pure water or fermented liquors.
- And, 6. Above all, the being obliged to live continually on salted meats, perhaps not well cured, without a due proportion of the vegetables sufficient to correct the pernicious tendency of the salt, by supplying the bland oil and saccharine matter requisite for the purposes of nutrition.

These general principles respecting the causes and nature of scurvy, seem to afford a better explanation of the phenomena of the disease than any conjectures respecting it that have hitherto been proposed. It must, however, be allowed, that Dr Lind is by no means the only writer who is disposed to consider this disease as not referable to the condition of the circulating fluids. In a late ingenious treatise on this subject by Dr Milman, he strenuously contends, that the primary morbid affection in this complaint is a debilitated state of the solids arising principally from want of aliment. But his arguments on this subject, as well as those of Dr Lind, are very ably answered by a still later writer on this subject, Dr Trotter, who has drawn his observations respecting it from very extensive experience, and who considers it as clearly established, by incontrovertible facts, that the proximate cause of scurvy depends on some peculiar state of the blood. — Dr Trotter, in the second edition of his *Observations on the Scurvy*, from the result of farther observation and later discoveries in chemistry, has attempted, with much ingenuity, to prove that the morbid condition of the blood, which takes place in scurvy, arises from the abstraction of vital air, or, as it is now generally called, *oxygen*; and this opinion, though still, perhaps, in some particulars requiring farther confirmation, is, it must be allowed, supported by many plausible arguments.

Prevention and Cure. The scurvy may be prevented, by obviating and correcting those circumstances in respect of the non-naturals which were mentioned as contributing to the disease, and laid down as causes. It is therefore a duty highly incumbent on officers commanding at sea, or in garrisons, to use every possible precaution; and, in the first place, to correct the coldness and moisture of the atmosphere by sufficient fires: in the next, to see that their men be lodged in dry, clean, and well ventilated births or apartments: thirdly, to promote cheerfulness, and enjoin frequent exercise, which alone is of infinite use in preventing the scurvy: fourthly, to take care that the cloathing be proper, and cleanliness of person strictly observed: fifthly, to supply them with wholesome drink, either

pure water or sound fermented liquors; and if spirits be allowed, to have them properly diluted with water and sweetened with melasses or coarse sugar: and lastly, to order the salted meats to be sparingly used, or sometimes entirely abstained from; and in their place, let the people live on different compositions of the dried vegetables; fresh meat and recent vegetables being introduced as often as they can possibly be procured.

A close attention to these matters will, in general, prevent the scurvy from making its appearance at all, and will always hinder it from spreading its influence far. But when these precautions have been neglected, or the circumstances such that they cannot be put in practice, and the disease hath actually taken place, our whole endeavour must be to restore the blood to its original state of soundness: and happily, such is the nature of this disease, that if a sufficiency of new matter, of the truly mild nutritious sort, and particularly such as abounds with vital air, such as recent vegetables, or different acid fruits, can be thrown into the circulation while the fleshy fibres retain any tolerable degree of firmness, the patient will recover; and that in a surprisingly short space of time, provided a pure air, comfortable lodgings, sufficient cloathing, cleanliness, and exercise, lend their necessary aid.

This being the case, the plan of treatment is to be conducted almost entirely in the dietetic way; as the change in the mass of blood, which it is necessary to produce, must be brought about by things that can be received into the stomach by pints or pounds, and not by those which are administered in drops or grains, drachms or ounces. For here, as there is no disorder of the nervous system, we have no need of those active drugs which are indispensably necessary in febrile or nervous diseases; the scorbutic diathesis being quite opposite to that which tends to produce a fever or any species of spasmodic disorders; nay, Dr Lind says, he has repeatedly found, that even the infection of an hospital fever is long resisted by a scorbutic habit.

It will now naturally occur to the reader, what those alimentary substances must be which bid the fairest to restore the blood to its healthy state; and he needs scarcely to be told, that they are of those kinds which the stomach can bear with pleasure though taken in large quantities, which abound in jelly or mucilage, and which allow those nutritious parts to be easily developed; for though the viscera in scorbutic patients may be all perfectly sound, yet we cannot expect that either the digestive fluids or organs should possess the same degrees of power, which enable them, during health, to convert the crude dry farinacea, and the hard salted flesh of animals, into nourishment. We must therefore search for the *antiscorbutic virtue* in the tender sweet flesh of herbivorous animals; in new milk; and in the mucilaginous acid juices of recent vegetables, whether they be fruits, leaves, or roots.

The four juices of lemons, oranges, and limes, have been generally held as antiscorbutics in an eminent degree, and their power ascribed to their acid; from an idea that acids of all kinds are the only correctors of putrefaction. But the general current of practical observations

Impetigines observations shows, and our experiments confirm it, that the virtue of these juices depends on their *aerial principle*; accordingly, while perfectly recent and in the mucilaginous state, and especially if mixed with wine and sugar, the juices of any one of these fruits will be found a most grateful and powerful antiscorbutic.

Dr Lind observing, "that the lemon-juice, when given by itself undiluted, was apt, especially if overdosed, to have too violent an operation, by occasioning pain and sickness at the stomach, and sometimes a vomiting; therefore found it necessary to add wine and sugar. A pint of Madeira wine, and two ounces of sugar, were put to four ounces and a half of juice, and this quantity was found sufficient for weak patients to use in 24 hours: such as were very weak sipped a little of this frequently according as their strength would permit; others who were stronger took about two ounces of it every two hours; and when the patients grew still stronger, they were allowed eight ounces of lemon-juice in 24 hours."

While this very pleasant mixture, which is both a cordial and an antiseptic, may be had, it would be needless to think of prescribing any other; but when the fresh juice cannot be procured, we must have recourse to such other things as may be obtained. But the various modes of combining and administering these, so as to render them perfectly agreeable to the stomach, must always be regulated by circumstances, and therefore it will be in vain to lay down particular directions; since all that we have to do is, to fix on such fruits and other fresh vegetables as can be most conveniently had and taken, and contrive to give them in those forms, either alone or boiled up with flesh-meat into soups, that will allow the patients to consume the greatest quantities.

The first promising alteration from such a course is usually a gentle diarrhoea; and if, in a few days, the skin becomes soft and moist, it is an infallible sign of recovery; especially if the patient gain strength, and can bear being stirred or carried into the open air without fainting.

But if the belly should not be loosened by the use of the fresh vegetables, nor the skin become soft and moist, then they must be assisted by stewed prunes, or a decoction of tamarinds with cream of tartar, in order to abate the costiveness; and by drinking a light decoction of the woods, and warm bathing, in order to relax the pores of the skin; for nothing contributes more to the recovery of scorbutic patients than moderate sweating.

With regard to particular symptoms, antiseptic mouth-waters composed of a decoction of the Peruvian bark and infusion of roses, with a solution of myrrh, must be used occasionally, in order to cleanse the mouth, and give firmness to the spongy gums. Swelled and indurated limbs, and stiffened joints, must be bathed with warm vinegar, and relaxed by the steam of warm water, repeatedly conveyed to them, and confined to the parts by means of close blankets: ulcers on the legs must never be treated with unctuous applications nor sharp escharotics; but the dressing should consist of lint or soft rags, dipt in a strong decoction of Peruvian bark.

This disease at no time requires, or indeed bears,

large evacuations, either by bleeding or purging; and, as has been already mentioned, the belly must only be kept open by the fresh vegetables or the mildest laxatives. But we are always to be careful that scorbutic persons, after a long abstinence from greens and fruits, be not permitted to eat voraciously at first, lest they fall into a fatal dysentery.

All, however, that has now been laid down as necessary towards the cure, supposes the patients to be in situations where they can be plentifully furnished with all the requisites; but unhappily these things are not to be procured at sea, and often deficient in garisons: therefore, in order that a remedy for the scurvy might never be wanting, Dr Macbride, in the year 1762, first conceived the notion, that the *infusion of malt*, commonly called *wort*, might be substituted for the common antiscorbutics; and it was accordingly tried.

More than three years elapsed before any account arrived of the experiments having been made: at length, ten histories of cases were received, wherein the wort had been tried, with very remarkable success; and this being judged a matter of great importance to the seafaring part of mankind, these were immediately communicated to the public in a pamphlet under the title of *An historical account of a new method of treating the scurvy at sea*.

This was in 1767; but after that time a considerable number of letters and medical journals, sufficient to make up a small volume, were transmitted to the author, particularly by the surgeons of his Majesty's ships who had been employed of late years for making discoveries in the southern hemisphere. Certain it is, that in many instances it has succeeded beyond expectation. In others it has fallen short: but whether this was owing to the untoward situation of the patients, or inattention on the part of the persons who were charged with the administration of the wort, not preparing it properly, or not giving it in sufficient quantity, or to its own want of power, must be collected from the cases and journals themselves.

During Captain Cook's third voyage, the most remarkable, in respect of the healthiness of the crew, that ever was performed, the wort is acknowledged to have been of singular use.

In a letter which this very celebrated and successful circumnavigator wrote to Sir John Pringle, he gives an account of the methods pursued for preserving the health of his people; and which were productive of such happy effects, that he performed "a voyage of three years and 18 days, through all the climates from 52° north to 71° south, with the loss of one man only by disease, and who died of a complicated and lingering illness, without any mixture of scurvy. Two others were unfortunately drowned, and one killed by a fall; so that out of the whole number 118 with which he set out from England, he lost only four.

He says, that much was owing to the extraordinary attention of the admiralty, in causing such articles to be put on board as either by experience or conjecture were judged to tend most to preserve the health of seamen; and with respect to the wort, he expresses himself as follows:

"We had on board a large quantity of *malt*, of which

Impetigines which was made *sweet wort*, and given (not only to those men who had manifest symptoms of the scurvy, but to such also as were, from circumstances, judged to be most liable to that disorder) from one or two to three pints in the day to each man, or in such proportion as the surgeon thought necessary, which sometimes amounted to three quarts in the 24 hours: this is without doubt one of the best antiscorbutic sea-medicines yet found out; and if given in time, will, with proper attention to other things, I am persuaded, prevent the scurvy from making any great progress for a considerable time: but I am not altogether of opinion that it will cure it, in an advanced state, at sea."

On this last point, however, the Captain and his Surgeon differ; for this gentleman positively asserts, and his journal (in Dr Macbride's possession) confirms it, that the infusion of malt did effect a cure in a confirmed case, and at sea.

The malt, being thoroughly dried, and packed up in small casks, is carried to sea, where it will keep sound, in every variety of climate, for at least two years: when wanted for use, it is to be ground in a hand-mill, and the infusion prepared from day to day, by pouring three measures of boiling water on one of the ground malt; the mixture being well mashed, is left to infuse for 10 or 12 hours, and the clear infusion then strained off. The patients are to drink it in such quantities as may be deemed necessary, from one to three quarts in the course of the 24 hours: a panado is also to be made of it, by adding biscuit, and currants or raisins; and this palatable mess is used by way of solid food. This course of diet, like that of the recent vegetables, generally keeps the bowels sufficiently open; but in cases where costiveness nevertheless prevails, gentle laxatives must be interposed from time to time, together with diaphoretics, and the topical assistants, fomentations and gargles, as in the common way of management.

Captain Cook was also provided with a large stock of *sour krout*; (cabbage-leaves cut small, fermented and stopped in the second stage of fermentation.) A pound of this was served to each man, twice a-week, while they were at sea. Sour krout, since the trial made of it on board Captain Cook's ships, has been extensively used by direction of the British government in many other situations, where scorbutus has prevailed; and it has been found to be highly serviceable both in preventing and in curing the disease. It was particularly found during the late American war to be highly beneficial to the British troops besieged in Boston, who were at that time entirely fed on salt provisions sent from England. The scurvy at one period broke out among them with very alarming appearances; but by the seasonable arrival of a quantity of sour krout, it was effectually overcome. Care, however, must be bestowed, that this article be properly prepared and properly kept. When due attention is paid to these particulars, it may be preserved in good condition for many months; and is considered both by sailors and soldiers as a very acceptable addition to their salt provisions. But when served out to them in a putrid state, it is not only highly disagreeable to the taste, but probably also pernicious in its effects.

Among other means of preventing scurvy, Captain N° 208

Cook had also a liberal supply of *portable soup*; Scorbutus, of which the men had generally an ounce, three days in the week, boiled up with their pease; and sometimes it was served to them oftener; and when they could get fresh greens, it was boiled up with them, and made such an agreeable mess, that it was the means of making the people eat a greater quantity of greens than they would otherwise have done. And what was still of further advantage, they were furnished with sugar in lieu of butter or oil, which is seldom of the sweetest sort; so that the crew were undoubtedly great gainers by the exchange.

In addition to all these advantages of being so well provided with every necessary, either in the way of diet or medicine, Captain Cook was remarkably attentive to all the circumstances respecting cleanliness, exercise, sufficient cloathing, provision of pure water, and purification of the air in the closer parts of the ship.

From the effect of these different means, as employed by Captain Cook, there can be little doubt that they will with due attention be sufficient for the prevention and cure of the disease, at least in most situations: but besides these, there are also some other articles which may be employed with great advantage.

Newly brewed spruce-beer made from a decoction of the tops of the spruce-fir and melasses, is an excellent antiscorbutic: it acts in the same way that the wort does, and will be found of equal efficacy, and therefore may be substituted. Where the tops of the spruce-fir are not to be had, this beer may be prepared from the essence of spruce as it has been called, an article which keeps easily for a great length of time. But in situations where neither the one nor the other can be had, a most salutary mess may be prepared from oatmeal, by infusing it in water, in a wooden vessel, till it ferments, and begins to turn sourish; which generally happens, in moderately warm weather, in the space of two days.—The liquor is then strained off from the grounds, and boiled down to the consistence of a jelly, which is to be eat with wine and sugar, or with butter and sugar.

Nothing is more commonly talked of than a *land-scurvy*, as a distinct species of disease from that which has been now described; but no writer has yet given a description so clear as to enable us to distinguish it from the various kinds of cutaneous foulness and eruption, which indeed are vulgarly termed *scorbutic*, but which are a-kin to the itch or leprosy, and for the most part require mercurials. These, however, are very different diseases from the true scorbutus, which, it is well known, may prevail in certain situations on land as well as at sea, and is in no degree to be attributed to sea air.

GENUS LXXXVII. ELEPHANTIASIS.

Elephantiasis, *Sauv.* gen. 301. *Vog.* 321. *Sag.* gen. 128.

Elephantia Arabum, *Vog.* 322.

The best account of this disease is that by Dr Herberden, published in the first volume of the Medical Transactions. According to him, frequently the first symptom is a sudden eruption of tubercles, or bumps of different sizes, of a red colour, more or less intense (attended

Impetigines (attended with great heat and itching), on the body, legs, arms, and face; sometimes in the face and neck alone, at other times occupying the limbs only; the patient is feverish; the fever ceasing, the tubercles remain indolent, and in some degree scirrhous, of a livid or copper colour, but sometimes of the natural colour of the skin, or at least very little altered; and sometimes they after some months ulcerate, discharging a fetid ichorous humour in small quantity, but never laudable pus.

The features of the face swell and enlarge greatly; the part above the eye-brows seems inflated; the hair of the eye-brows falls off, as does the hair of the beard; but Dr Heberden has never seen any one whose hair has not remained on his head. The *ala nasi* are swelled and scabrous; the nostrils patulous, and sometimes affected with ulcers, which, corroding the cartilage and *septum nasi*, occasion the nose to fall. The lips are tumid; the voice is hoarse; which symptom has been observed when no ulcers have appeared in the throat, although sometimes both the throat and gums are ulcerated. The ears, particularly the lobes, are thickened, and occupied by tubercles. The nails grow scabrous and rugose, appearing something like the rough bark of a tree; and the distemper advancing, corrodes the parts gradually with a dry fordid scab or gangrenous ulcer; so that the fingers and toes rot and separate joint after joint. In some patients the legs seem rather posts than legs, being no longer of the natural shape, but swelled to an enormous size, and indurated, not yielding to the pressure of the fingers; and the superficies is covered with very thin scales, of a dull whitish colour, seemingly much finer, but not so white as those observed in the *lepra Græcorum*. The whole limb is overspread with tubercles, interspersed with deep fissures; sometimes the limb is covered with a thick moist scabby crust, and not unfrequently the tubercles ulcerate. In others the legs are emaciated, and sometimes ulcerated; at other times affected with tubercles without ulceration. The muscular flesh between the thumb and fore-finger is generally extenuated.

The whole skin, particularly that of the face, has a remarkably shining appearance, as if it was varnished or finely polished. The sensation in the parts affected is very obtuse, or totally abolished; so that pinching, or puncturing the part, gives little or no uneasiness; and in some patients, the motion of the fingers and toes is quite destroyed. The breath is very offensive; the pulse in general weak and slow.

The disease often attacks the patient in a different manner from that above-described, beginning almost insensibly; a few indolent tubercles appearing on various parts of the body or limbs, generally on the legs or arms, sometimes on the face, neck, or breast, and sometimes in the lobes of the ears, increasing by very slow degrees, without any disorder, previous or concomitant, in respect of pain or uneasiness.

To distinguish the distemper from its manner of attacking the patient, Dr Heberden styles the first by *fluxion* and the other by *congestion*. That by fluxion is often the attendant of a crapula, or surfeit from gross foods; whereby, perhaps, the latent seeds of the disorder yet dormant in the mass of blood are excited; and probably from frequent observations of this kind

VOL. XI. Part I.

(the last meal always having the blame laid on it), it is, that, according to the received opinion, either fish, (the tunny, mackarel, and shell-fish, in particular), melons, cucumbers, young garden-beans, or mulberries, eaten at the same meal with butter, cheese, or any preparation with milk, are supposed to produce the distemper, and are accordingly religiously avoided.

Violent commotions of the mind, as anger, fear, and grief, have more than once been observed to have given rise to the disorder; and more frequently, in the female sex, a sudden suppression of an accustomed evacuation, by bathing the legs and feet in cold water at an improper season.

The disorder by fluxion is what is the ofteneft endeavoured to be remedied by timely application; that by congestion, not being so conspicuous, is generally either neglected or attempted to be concealed, until perhaps it be too late to be cured, at least unless the patients would submit to a longer course of medicine and stricter regimen of diet than they are commonly inclined to do.

Several incipient disorders by fluxion have been known to yield to an antiphlogistic method, as bleeding, refrigerant salts, in the saline draughts, and a solution of crystals of tartar in water, for common drink, (by this means endeavouring to precipitate part of the peccant matter, perhaps too gross to pass the pores by the kidneys); and when once the fever is overcome, the Peruvian bark combined with sassafras is the remedy principally to be relied on. The only topical medicine prescribed by Dr Heberden, was an attenuating embrocation of brandy and alkaline spirit. By the same method some confirmed cases have been palliated. But, excepting in one patient, he never saw or heard of a confirmed elephantiasis radically cured. He adds, however, that he never met with another patient possessed with prudence and perseverance enough to prosecute the cure as he ought.

GENUS LXXXVIII. LEPROA.

The LEPROSY.

353

Leprosy, Sauv. gen. 303. *Lin.* 262. *Sag.* 129.

Leprosy, *Græcorum*, *Vog.* 320.

THIS distemper is but little known to physicians in the western parts of Europe. Wallis tells us, that it first begins with red pimples, or pustules, breaking out in various parts of the body. Sometimes they appear single; sometimes a great number arise together, especially on the arms and legs: as the disease increases, fresh pimples appear, which, joining the former, make a sort of clusters; all which enlarge their borders, and spread in an orbicular form. The superficies of these pustules are rough, whitish, and scaly; when they are scratched the scales fall off, upon which a thin ichor oozes out, which soon dries and hardens into a scaly crust. These clusters of pustules are at first small and few; perhaps only three or four in an arm or leg, and of the size of a silver penny. But if the disease be suffered to increase, they become more numerous, and the clusters increase to the size of a crown-piece, but not exactly round. Afterwards it increases to such a degree, that the whole body is covered with a leprous scurf. The cure of this distemper is very much the same

Qq

same

Elephantiasis.

Impetigines same with that of the ELEPHANTIASIS. Here, however, recourse is frequently had to antimonial and mercurial medicines, continued for a considerable length of time. In conjunction with these, warm bathing, particularly the vapour bath, has often been employed with advantage.

Although what can strictly be called lepra is now, at least, a very rare disease in this country, yet to this general head may be referred a variety of cutaneous affections which are here very common, and which in many instances prove very obstinate. These appear under a variety of different forms; sometimes under that of red pustules; sometimes of white scurfs; sometimes of ulcerations; and not unfrequently a transition takes place from one form to another, so that they cannot be divided into different genera from the external appearance. These affections will often yield to the remedies already mentioned; but where antimonials and mercurials either fail, or from different circumstances are considered as unadvisable, a cure may sometimes be effected by others. In particular cases, purging mineral waters, the decoction of elm bark, the infusion of the *œnanthe crocata*, and various others, have been employed with success. Different external applications also have sometimes been employed with advantage. An article used in this way, known under the name of Gowland's lotion, with the composition of which we are unacquainted, has been much celebrated, and has been said to be used with great success, particularly against eruptions on the face and nose.

354

GENUS LXXXIX. FRAMBOESIA.

The YAWS.

Framboesia, Sauv. gen. 125. Sag. 125.

Description. The description which is given of this distemper by the anonymous author of a paper in the sixth volume of the Edinburgh Medical Essays (art. 76.) differs, in some circumstances, from one that Sauvages received from M. Virgile, an eminent surgeon of Montpellier, who practised 12 years in the island of St Domingo; and therefore he distinguishes the *frambœsia* into two species, *Guineensis* and *Americana*.

The *frambœsia Guineensis* is said by the first mentioned writer to be so common on the coast of Guinea and other parts of Africa, that it seldom fails to attack each individual of both sexes, one time or other, in the course of their lives; but most commonly during childhood or youth. "It makes its appearance in little spots on the cuticle, level with the skin, at first no larger than a pin's head, which increase daily, and become protuberant like pimples: soon after the cuticle frets off, and then, instead of finding pus or ichor, in this small tumor, only white sloughs or fordes appear, under which is a small red fungus, growing out of the cutis, increasing gradually to very different magnitudes, some less than the smallest wood strawberry, some as big as a raspberry, and others exceeding in size even the largest mulberries; which berries they very much resemble, being knobbed as they are." These protuberances, which give the name to the disease, appear on all parts of the body: but the greatest numbers, and the largest sized, are generally found in the groins, and about the pudenda or anus, in the arm-pits, and on the face: when the yaws are very

large, they are few in number; and when remarkably numerous, they are less in size. The patients, in all other respects, enjoy good health, do not lose their appetite, and seem to have little other uneasiness than what the sores occasion.

M. Virgile describes the species of yaws that is common among the negroes of St Domingo, and which Sauvages has termed *frambœsia Americana*, as beginning from an ulcer that breaks out indiscriminately in different parts of the body, though most commonly on the legs; at first superficial, and not different from a common ulcer in any other circumstances save its not healing by the usual applications; sooner or later, numerous fungous excrescences break out on the surface of the body, as before described, like little berries, moist, with a reddish mucus. Besides these, the soles of the feet and palms of the hands become raw, the skin fretting off, so as to leave the muscles bare; these excoriations are sometimes moist with ichor and sometimes dry, but always painful, and consequently very distressing. They are mentioned also by the author of the article in the Medical Essays; and both he and M. Virgile observe, that there is always one excrescence, or yaw, of an uncommon size, which is longer in falling off than the others, and which is considered as the *master-yaw*, and so termed. An ingenious inaugural dissertation on the subject of the yaws was lately published at Edinburgh by Dr Jonathan Anderson Ludford, now physician in Jamaica. The author of that dissertation considers Dr Cullen as improperly referring *frambœsia* to the class of cachexiæ. He thinks that this disease ought rather to be referred to the exanthemata; for, like the small-pox, he tells us it has its accession, height, and decline. It begins with some degree of fever, either more or less violent; it may be propagated by inoculation; and it attacks the same individual only once in the course of a lifetime, those who once recover from the disease being never afterwards affected with it. These particulars respecting *frambœsia* are rested not merely on the authority of Dr Ludford, but are supported also by the testimony of Dr William Wright, a physician of distinguished eminence, who, while he resided in Jamaica, had, in the course of extensive practice, many opportunities of observing this disease, and to whom Dr Ludford acknowledges great obligations for having communicated to him many important facts respecting it.

Dr Ludford considers the yaws as being in every instance the consequence of contagion, and as depending on a matter *sui generis*. He considers no peculiar predisposition from diet, colour, or other circumstances, as being in any degree necessary. He views the disease as chiefly arising from contact with the matter, in consequence of sleeping in the same bed, washing in the same vessel with the infected, or the like. In short, the yaws may be communicated by any kind of contact; nay, it is even believed that flies often convey the infection, when, after having gorged themselves with the virulent matter by sucking the ulcers of those who are diseased, they make punctures in the skin of such as are sound, and thus inoculate them; in consequence of which the disorder will soon appear, provided the *morbific disposition* of body be present.

Prognosis. The yaws are not dangerous, if the cure be

Imperigine be skilfully managed at a proper time ; but if the patient has been prematurely salivated, or has taken any quantity of mercury, and his skin been suddenly cleared thereby, the cure will be very difficult, if not impracticable.

Cure. In attempting the cure of this disease, the four following indications are chiefly to be held in view :

1. To support the strength of the patient.
2. To promote excretion by the skin.
3. To correct the vitiated fluids.
4. To remove and counteract the injuries done either to the constitution in general, or to particular parts, by the disease.

With the first of these intentions, a liberal diet, consisting of a considerable quantity of animal food, with a considerable proportion of wine, and gentle exercise, are to be employed : but the cure is principally to be effected by mercurial salivation, after the virulent matter has been completely thrown out to the surface of the body by sudorifics. The following are the particular directions given on this head by the author of the article in the Medical Essays. The yaws being an infectious disease, as soon as they begin to appear on a negro, he must be removed to a house by himself ; or, if it is not certain whether the eruption be the yaws or not, shut him up seven days, and look on him again, as the Jews were commanded to do with their lepers, and in that time you may be commonly certain.

As soon as you are convinced that it is the yaws, give a bolus of flowers of sulphur, with camphor and theriaca. Repeat this bolus every night for a fortnight or three weeks, or till the yaws come to the height ; that is, when they neither increase in size or number ; then throw your patient into a gentle salivation with calomel given in small doses, without farther preparation ; five grains repeated once, twice, or thrice a-day, is sufficient, as the patient can bear it. If he spits a quart in 24 hours, it is enough. Generally, when the salivation is at this height, all the yaws are covered with a dry scaly crust or scab ; which, if numerous, look terribly. These fall off daily in small white scales ; and in ten or twelve days leave the skin smooth and clean. Then the calomel may be omitted, and the salivation permitted to go off of itself. A dram of corrosive sublimate dissolved in an ounce of rum or brandy, and the solution daubed on the yaws, will, it is said, in general clear the skin in two days time.

After the salivation, sweat the patient twice or thrice in a frame or chair with spirits of wine ; and give an alterative electuary of æthiops and gum guaiac. He may likewise use the decoction of guaiacum and saffras fermented with melasses, for his constant drink while the electuary is taking, and a week or a fortnight after the electuary is finished.

The master-yaw must be consumed an eighth or a tenth part of an inch below the skin, with *Mercur. corros. rub. & alum. ust. an. part. equal.* and digested with *Ung. basil. flav. ʒj. and mercur. corros. rub. ʒj.* and cicatrized with lint pressed out of spirits of wine, and with the vitriol of copper.

After the yaws are cured, some patients are afflicted with carbuncles in their feet ; which sometimes render them incapable of walking, unless with pain. The

method of cure is, by bathing and paring, to destroy the cuticle, and then proceed as in the master-yaw. The gentle escharotics are to be preferred, especially here ; and all imaginable care is to be taken to avoid the tendons and periosteum.

To children under six or seven years old, at the proper time of salivating, when the yaws are come to their full growth, give a grain or two of calomel in white sugar, once a-day, once in two days, or once in three days, so as only to keep their mouths a little fore till the yaws dry, and, falling off in white scales, leave the skin clean. This succeeds always, but requires a longer time than in adults.

In St Domingo they salivated by unction ; but it does not appear that success always followed this practice. It is also usual in that island to give the solution of corrosive sublimate along with a decoction of sarsaparilla. Twelve bunces of this root, and 12 pounds of the coarsest sugar, macerated for 15 days in 12 quarts of water, is mentioned as a specific, and said to be the prescription of an English physician ; the dose is four ounces every sixth hour.

GENUS XC. TRICHOMA.

The *PLICA POLONICA*, or *Plaited Hair*.

355

Trichoma, *Sauv. gen.* 311. *Sag.* 137.

Plica, *Lin.* 313.

Plica five *Rhopalosis*, *Vog.* 323.

THIS disorder is only met with in Poland and Lithuania, and consists of several blood-vessels running from the head into the ends of the hairs ; which cleave together, and hang from the head in broad flat pieces, generally about an ell in length, but sometimes they are five or six yards long ; one patient hath more or less of these, up to 20, and sometimes 30. They are painful to the wearer, and odious to every spectator. At the approach of winter an eruptive fever happens to many in these countries : the eruptions principally infect the head, and when at the height an ichorous humour flows from them. In this state they are too tender to admit of being touched, and the matter running down the hairs mats them together ; the skin by degrees breaking, the ramifications of the capillary vessels following the course of the hair, or prolonged out of the skin, are increased to a vast length.

No method of relief is yet known ; for if the discharge be checked, or the vessels cut off, the consequence is an increase of more miserable symptoms, and in the end death. Sennertus says, when all the morbid matter is thrown out of the body the plicæ fall off spontaneously. He further observes, that the only safe practice in this case is, to solicit the peccant matter to the hairs, to which it naturally tends ; and that this is best answered by lotions of bear's-breech. Some say that a decoction of the herb club-moss, and its seeds, with which the head is to be washed, is a specific.

GENUS XCI. ICTERUS.

The *JAUNDICE*.

356

Icterus, *Lin.* 224. *Vog.* 306. *Boerb.* 918. *Junc.* 90.

Aurigo, *Sauv. gen.* 306. *Sag.* 132.

Cachexia icterica, *Hoffm.* III. 301.

Q 92

Description.

Impetigines

Description. The jaundice first shows itself by a listlessness and want of appetite, the patient becomes dull, oppressed, and generally costive. These symptoms have continued but a very short time, when a yellow colour begins to diffuse itself over the *tunica albuginea*, or white part of the eye, and the nails of the fingers; the urine becomes high coloured, with a yellowish sediment capable of giving a yellow tinct to linen; the stools are whitish or grey. In some there is a most violent pain in the epigastric region, which is considerably increased after meals. Sometimes the patient has a continual propensity to sleep; but in others there is too great watchfulness; and sometimes the pain is so great, that though the patient be sleepy he cannot compose himself to rest. The pains come by fits; and most women who have had the jaundice and born children, agree, that they are more violent than labour-pains. As the disease increases, the yellow colour becomes more and more deep; an itching is felt all over the skin; and even the internal membranes of the viscera, the bones, and the brain itself, become tinged, as hath been shown from dissections, where the bones have been found tinged sometimes for years after the jaundice has been cured.

In like manner, all the secretions are affected with the yellow colour of the bile, which in this disease is diffused throughout the whole mass of fluids. The saliva becomes yellowish and bitter; the urine excessively high-coloured, in such a manner as to appear almost black; nay, the blood itself is sometimes said to appear of a yellow colour when drawn from a vein; yet Dr Heberden says that he never saw the milk altered in its colour, even in cases of very deep jaundice. In process of time the blood begins to acquire a tendency to dissolution and putrefaction; which is known by the patient's colour changing from a deep yellow to a black or dark yellow. Hæmorrhagies ensue from various parts of the body, and the patients frequently die of an apoplexy; though in some the disease degenerates into an incurable dropsy; and there have not been wanting instances of some who have died of the dropsy after the jaundice itself had been totally removed.

Causes. As the jaundice consists in a diffusion of the bile throughout the whole system, it thence follows, that whatever may favour this diffusion is also to be reckoned among the causes of jaundice. Many disputes have arisen concerning the manner in which the bile is reformed into the blood; but it is now generally agreed that it is taken up by the lymphatics of the gall-bladder and biliary ducts. Hence, a jaundice may arise from any thing obstructing the passage of the bile into the duodenum, or from any thing which alters the state of the lymphatics in such a manner as to make them capable of absorbing the bile in its natural state. Hence the jaundice may arise from scirrhus of the liver or other viscera pressing upon the biliary ducts, and obstructing the passage of the bile; from flatus distending the duodenum, and shutting up the entrance of the ductus communis choledochus into it; from the same orifice being plugged up by viscid bile, or other fordes; but by far the most frequent cause of jaundice is the formation of calculi, or more properly biliary concretions: for although they were long considered as being of a calcareous nature, yet more accurate experiments have now demonstrated, that they con-

sist principally of a sebaceous matter; accordingly, while they are so light as to swim in water, they are also highly inflammable. These are found of almost all sizes, from that of a small pea to that of a walnut, or bigger: they are of different colours; and sometimes appear as if formed in the inward part by crystallization, but of lamellæ on the outer part; though sometimes the outward part is covered with rough and shining crystals, while the inward part is lamellated. These enter into the biliary ducts, and obstruct them, causing a jaundice, with violent pain for some time; and which can be cured by no means till the concretion is either passed entirely through the ductus communis or returned into the gall-bladder. Sometimes, in the opinion of many celebrated physicians, the jaundice is occasioned by spasmodic contractions of the biliary ducts; but this is denied by others, and it is not yet ascertained whether these ducts are capable of being affected by spasm or not, as the existence of muscular fibres in them has not with certainty been discovered. It cannot, however, be denied, that violent fits of passion have often produced jaundice, sometimes temporary, but frequently permanent. This has been by some deemed a sufficient proof of the spasmodic contraction of the ducts; but their opponents suppose, that the agitation occasioned by the passion might push forward some biliary concretion into a narrow part of the duct, by which means a jaundice would certainly be produced, till the concretion was either driven backward or forward into the duodenum altogether. But even supposing the ducts themselves to be incapable of spasm, yet there can be no doubt that by a spasm of the intestines biliary concretions may be retained in the ducts; and indeed it is principally where the duct entering obliquely into the intestine forms as it were a species of valve that these concretions are retained.

In a very relaxed state of the body there is also an absorption of the bile, as in the yellow fever; and indeed in all putrid disorders there is a kind of yellowish tinct over the skin, though much less than in the true jaundice. The reason of this is, that in these disorders there is usually an increased secretion of bile, commonly of a thinner consistence than in a healthy state, while the orifices of the lymphatics are probably enlarged, and thus ready to absorb a fluid somewhat thicker than what they ought to take up in a healthy state; but these disorders are of short duration in comparison with the real jaundice, which sometimes lasts for many years. These affections, however, cannot with propriety in any case be considered as real instances of jaundice; for to constitute that disease, bile must not only be present in the blood, but wanting in the alimentary canal.

It is observable, that women are more subject to jaundice than men, which probably arises from their more sedentary life; for this, together with some of the depressing passions of the mind, are found to promote the accession of the disease, if not absolutely to produce it. Pregnant women also are frequently attacked by the jaundice, which goes off after their delivery.

Prognosis. As jaundice may arise from many different causes, some of which cannot be discovered during the patient's life, the prognosis must on this account be very uncertain. The only cases which admit

Icterus

Impetigines of a cure are those depending upon biliary concretions, or obstructions of the biliary ducts by viscid bile; for the concretions are seldom of such a size that the ducts will not let them pass through, though frequently not without extreme pain. Indeed this pain, though so violent, and almost intolerable to the sick person, affords the best prognosis; as the physician may readily assure his patient that there is great hope of his being relieved from it. The coming on of a gentle diarrhoea, attended with bilious stools, together with the cessation of pain, are signs of the disease being cured. We are not, however, always to conclude, because the disease is not attended with acute pain, that it is therefore incurable; for frequently the passage of a concretion through the biliary ducts is accompanied only with a sensation of slight uneasiness.

Cure. The great object to be aimed at in the cure of jaundice is unquestionably the removal of the cause which obstructs the passage of bile into the intestine: But before this can be accomplished, practices are often necessary for alleviating urgent symptoms; which may be done sometimes by supplying the want of bile in the alimentary canal, sometimes by affording an exit for bilious matter from the general mass of blood, but most frequently by obviating the effects of distension and obstruction to the circulation in the system of the liver.

The measures to be employed for the removal of the obstruction must depend very much on the nature of the obstructing cause.

When the jaundice arises from indurated swellings or scirrhi of the viscera, it is absolutely incurable; nevertheless, as these cannot always be discovered, the physician ought to proceed in every case of jaundice as if it arose from calculi. The indications here are, 1. To dissolve the concretions; and, 2. To prevent their formation a second time. But unhappily the medical art has not yet afforded a solvent for biliary concretions. They cannot even be dissolved when tried out of the body either by acids or alkalies, or any thing but a mixture of oil of turpentine and spirit of wine; and these substances are by far too irritating to be given in sufficient quantity to affect a concretion in the biliary ducts. Boerhaave observes, that diseases of the liver are much more difficult to cure than those in any other part of the body; because of the difficulty there is in getting at the part affected, and the tedious and round-about passage the blood hath to it. The juice of common grass has indeed been recommended as a specific in the jaundice, but on no very good foundation. Glisson observes, that black cattle are subject to biliary concretions when fed with hay or dried straw in winter, but are cured by the succulent grass in the spring; and Van Swieten tells a strange story of a man who cured himself of the jaundice by living almost entirely on grass, of which he devoured such quantities, that the farmers were wont to drive him out of their fields; but other practitioners have by no means found this in any degree effectual. The only method of cure now attempted in the jaundice is to expel the concretion into the intestines; for which vomits and exercise are the principal medicines. The former are justly reckoned the most efficacious medicines, as they powerfully shake all the abdominal and thoracic viscera; and thus tend to dislodge any ob-

structing matter that may be contained in them. But if there be a tendency to inflammation, vomits must not be exhibited till bleeding has been premised. We must also proceed with caution if the pain be very sharp; for in all cases where the disease is attended with violent pain, it will be necessary to allay it by opiates before the exhibition of an emetic. There is also danger, that, by a continued use of vomits, a concretion which is too large to pass, may be so impacted in the ducts, that it cannot even be returned into the gall-bladder, which would otherwise have happened. In all cases, therefore, if no relief follows the exhibition of the second or third emetic, it will be prudent to forbear their farther use for some time.

Of all kinds of exercise, that of riding on horseback is most to be depended upon in this disease. It operates in the same manner with vomits, namely, by the concussion it gives to the viscera; and therefore the cautions necessary to be observed in the use of vomits are also necessary to be observed in the use of riding. Cathartics also may be of service, by cleansing the *prima via*, and soliciting a discharge of the bile into the intestines; but they must not be of too drastic a nature, else they may produce incurable obstructions, by bringing forward concretions that are too large to pass. Anodynes and the warm bath are serviceable by their relaxing quality; and there can be no doubt that, from acting as powerful antispasmodics, they often give an opportunity for the discharge of concretions by very slight causes, when they would otherwise be firmly retained. Soap has been supposed to do service as a solvent; but this is now found to be a mistake, and it acts in no other way than as a relaxant or as a gentle purgative.

But when all means of relief fail, as in cases of scirrhus, we can then only attempt to palliate the symptoms, and preserve the patient's life as long as possible. This is best accomplished by diuretics; for thus a great quantity of bilious matter is evacuated, and the system is freed from the bad consequences which ensue on its stagnation in the habit. But even this is by no means equal to the common evacuation by stool; nor can all the attempts to supply the want of bile in the intestines by bitters and other stomachics restore the patient to his wonted appetite and vigour. If the pain be very violent, we must on all occasions have recourse to opiates; or if the blood has acquired a tendency to dissolution, it must be counteracted by proper antiseptics.

If the disease goes off, its return must be prevented by a course of tonic medicines, particularly the Peruvian bark and antiseptics: but we can by no means be certain that the jaundice will not return, and that at any interval; for there may be a number of concretions in the gall-bladder, and though one hath passed, another may very quickly follow, and produce a new fit of jaundice; and thus some people have continued to be affected with the distemper, at short intervals, during life.

In the East-Indies, mercury has been lately recommended as exceedingly efficacious in disorders of the liver, especially those which follow intermitting and remitting fevers. Dr. Monro, in his Observations on the means of preserving the health of soldiers, acquaints us, that he has seen some icteric cases which, he thought,

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Icterus.

Impetigines received benefit from taking a few grains of *mercurius dulcis* at night, and a purge next morning; and this repeated two or three times a-week.

Infants are subject to a temporary jaundice, commonly called the *gum*, soon after birth, the cause of which is not well understood. It differs remarkably from the common jaundice; as, in the latter, the disease is first discoverable in the white of the eyes; but though the skin of infants in the *gum* is all over yellow, their eyes always remain clear. The disorder goes off spontaneously, or by the use of a gentle purgative or two.

357

CLASS IV. LOCALES.

VITIA, *Sauv.* Class I. *Lin.* Cl. XI. *Vog.* Cl. X.
Sag. Cl. I.

Plagæ, *Sag.* Cl. II.
Morbi organici Auctorum.

358

ORDER I. DYSÆSTHESIÆ.

Dysæsthesiæ, *Sauv.* Cl. VI. Ord. I. *Sag.* Cl. IX.
Ord. I.

359

GENUS XCII. CALIGO.
The CATARACT.

Caligo, *Sauv.* gen. 153. *Vog.* 288. *Sag.* gen. 259.
Cataracta, *Lin.* 109.

A *cataract* is an obstruction of the pupil, by the interposition of some opaque substance which either diminishes or totally extinguishes the sight. It is generally an opacity in the crystalline humour. In a recent or beginning *cataract*, the same medicines are to be used as in the *gutta serena*; and they will sometimes succeed. But when this does not happen, and the *cataract* becomes firm, it must be couched, or rather extracted; for which operation, see SURGERY.—Dr Buchan says he has resolved a recent *cataract* by giving the patient some purges with calomel, keeping a poultice of fresh hemlock constantly upon the eye, and a perpetual blister on the neck.

There is, however, but little reason to suppose that these practices will frequently succeed. A resolution can only be effected here by an absorption of the opaque matter; and where this is possible, there is perhaps a better chance of its being effected by the agency of the electric fluid than by any other means. For this purpose electricity is chiefly applied under the form of the *electric aura*, as it has been called; but even this is very rarely successful.

360

GENUS XCIII. AMAUROSIS.
The GUTTA SERENA.

Amaurosis, *Sauv.* gen. 155. *Lin.* 110. *Vog.* 238.
Sag. 261.
Amblyopia, *Lin.* 108. *Vog.* 236.

A *gutta serena* is an abolition of the sight without any apparent cause or fault in the eyes. In every case it depends on an affection of some part of the optic nerve. But the affections which may produce this disease are of different kinds. When it is owing to a

decay or wasting of the optic nerve, it does not admit of a cure; but when it proceeds from a compression of the nerves by redundant humours, these may be in some measure drained off, and the patient relieved. For this purpose, the body must be kept open with the laxative mercurial pills. If the patient be young, and of a sanguine habit, he may be bled. Cupping with scarifications on the back part of the head will likewise be of use. A running at the nose may be promoted by volatile salts, stimulating powders, &c. But the most likely means of relieving the patient, are issues or blisters kept open for a long time on the back part of the head, behind the ears, or on the neck; which have been known to restore sight even after it had been for a considerable time lost.—Should these fail, recourse must be had to a mercurial salivation; or, what will perhaps answer the purpose better, 12 grains of the corrosive sublimate mercury may be dissolved in an English pint and a half of brandy, and a table-spoonful of it taken twice a-day, drinking half a pint of the decoction of sarsaparilla after it.—Of late electricity has been much celebrated as efficacious, when no other thing could do service; and here it has in some degree the same chance of success as in other cases of insensibility, depending on an affection of the nerves, in some of which it has certainly in particular cases been of use.

In the amaurosis, Dr Porterfield observes, that it is of the utmost consequence to know of how long standing the disease has been; which is not always easily done if one eye only be affected. This is a very essential point; because an amaurosis of long standing is altogether incurable. Mr Boyle mentions the case of a man who had a *cataract* for several years without knowing it himself, though others did. He discovered it at last by happening to rub his sound eye, and was surprised to find himself in the dark. When a person therefore has a *gutta serena* only in one of the eyes, he may think that the eye has but lately lost the power of sight; though this perhaps has been the case for several years. On the other hand, he may imagine that a recent disease of this kind is really of long standing. But by inquiring at what time he first became subject to mistakes in all actions that require the distance to be exactly distinguished, as in pouring liquor into a glass, snuffing a candle, threading a needle, we may discover the age of the disease, and thence be assisted to form a more just prognostic with respect to its cure. Dr Porterfield gives an instance of his conjecturing in this manner concerning the case of a young lady who had discovered a loss of sight in one of her eyes only the day before. The disease was thought to be of long standing; but as the Doctor found that she had only been subject to mistakes of the kind above mentioned for about a month, he drew a favourable prognostic, and the disease was cured.

GENUS XCIV. DYSOPIA.
DEPRAVED VISION.

Amblyopia, *Sauv.* gen. 154. *Sag.* 258.

There are several species referred to this genus by Dr Cullen, viz.

1. *Dysopia TENEBRARUM*; 2. *Dysopia LUMINIS*.—The former of these is properly the *nyctalopia*, or night-blindness,

361

*Dysakthe-
fia* blindness, of ancient authors. But amongst both the Greek and Latin writers, there is a direct opposition in the use of this word *nyctalopia*; some saying it signifies "those who cannot see by night," and others express by it "those who cannot see during the day, but during the night."—The difference in the account of this disorder, as to its appearing in the night or in the day, is reconciled by considering it as of the intermitting kind: the difference then will consist in the different times of its approach; so it may be called *periodical blindness*. Intermittents appearing in a variety of modes, and the success of the bark in some instances of this sort of blindness, both favour the opinion of its being an intermittent disease of the eyes; and this view has accordingly been taken of it by some late writers, particularly in some papers in the London Medical Observations, and Medical Transactions.

3. *Dysopia PROXIMORUM* (*Presbytia*), or the defect of those who see only at too great distance. 4. *Dysopia DISSITORUM* (*Myopia*), or the defect of those who are short-sighted.—These are disorders which depend on the original structure or figure of the eye, therefore admit of no cure. The inconveniences arising from them may, however, be in some measure remedied by the help of proper glasses. The former requires the aid of a convex, and the latter of a concave glass.

5. *Dysopia LATERALIS*; a defect by which objects cannot be viewed distinctly but in an oblique position.—Thus, in viewing an object placed on the left, they turn their face and eye to the right, and *vice versa*.—This disorder may proceed from various causes both natural and accidental, some of which admit of no remedy. If it be occasioned by a partial adhesion of the eye-lids, the hand of the surgeon is required: if by a transverse position of the pupil, some mechanical contrivance is necessary. If it be owing to an *albugo* covering part of the pupil, or to a film rendering a portion of the cornea opaque, the remedies for these affections are to be here applied.

362

GENUS XCV. PSEUDOBLEPSIS.

IMAGINARY VISION of Objects which do not exist.

Suffusio, *Sauv.* gen. 217. *Sag.* 329.Phantasma, *Lin.* 73. *Sag.* 289.

This very often takes place when the body is diseased, and then the patient is said to be delirious. Sometimes, however, in these cases, it does not amount to delirium; but the person imagines he sees gnats or other insects flying before his eyes; or sometimes, that every thing he looks at has black spots in it, which last is a very dangerous sign. Sometimes also sparks of fire appear before the eyes; which appearances are not to be disregarded, as they frequently precede apoplexy or epilepsy. Sometimes, however, people have been affected in this manner during life without feeling any other inconvenience. Such a disorder can rarely if ever be cured.

363

GENUS XCVI. DYSECCEA.

DEAFNESS, or Difficulty of Hearing.

364

GENUS XCVII. PARACUSIS.

Depravation of HEARING.

Paracusis, *Sauv.* gen. 159. *Sag.* 265.Syrigmus, *Sauv.* gen. 219. *Sag.* 231.

The functions of the ear may be injured by wounds, ulcers, or any thing that hurts its fabric. The hearing may likewise be hurt by excessive noise; violent colds in the head; fevers; hard wax, or other substances sticking in the cavity of the ear; too great a degree of moisture or dryness of the ear. Deafness is very often the effect of old age, and is incident to most people in the decline of life. Sometimes it is owing to an original fault in the structure or formation of the ear itself. When this is the case it admits of no cure; and the unhappy person not only continues deaf, but generally likewise dumb, for life.

When deafness is the effect of wounds or ulcers of the ears, or of old age, it is not easily removed. When it proceeds from cold applied to the head, the patient must be careful to keep his head warm, especially in the night; he should likewise take some gentle purges, and keep his feet warm, and bathe them frequently in lukewarm water at bed-time. When deafness is the effect of a fever, it generally goes off after the patient recovers. If it proceed from dry wax sticking in the ears, it may be softened by dropping oil into them; afterwards they must be syringed with warm milk and water.

If deafness proceeds from dryness of the ears, which may be known by looking into them, half an ounce of the oil of sweet almonds, and the same quantity of camphorated spirit of wine, or tincture of *asafœtida*, may be mixed together, and a few drops of it put into the ear every night at bed-time, stopping them afterwards with a little wool or cotton. Some, instead of oil, put a small slice of the fat of bacon into each ear, which is said to answer the purpose very well.—When the ears abound with moisture, it may be drained off by an issue or seton, which should be made as near the affected parts as possible.

Some, for the cure of deafness, recommend the gall of an eel mixed with spirit of wine, to be dropped into the ear; others, equal parts of Hungary-water and spirit of lavender. Etmuller extols amber and mulk; and Brookes says, he has often known hardness of hearing cured by putting a grain or two of musk into the ear with cotton-wool. Where, however, an application with considerable stimulant power is necessary, camphorated oil, with the addition of a few drops of volatile alkaline spirit, may be considered as one of the best. It is proper, however, to begin with a small quantity of the alkali, increasing it as the ear is found to bear it. In some instances, where deafness depends on a state of insensibility in the nerves, electricity, particularly under the form either of sparks or of the electric aura, has been employed with great success. But these and other applications must be varied according to the cause of the disorder.

Though such applications may sometimes be of service, yet they much oftener fail, and frequently they do hurt. Neither the eyes nor ears ought to be tampered with; they are tender organs, and require a very delicate touch. For this reason, what we would chiefly recommend in deafness, is to keep the head warm. From whatever cause this disorder proceeds, this is always proper; and more benefit has often been derived from it alone, in the most obstinate cases of deafness, than from any medicines whatever.

GENUS

GENUS XCVIII. ANOSMIA.

Defect of SMELLING.

Anosmia, *Sauv.* gen. 156. *Lin.* 113. *Vog.* 248.
Sag. 262.

Causes. Morbid affections in the sense of smelling, may be considered with respect to their causes, as arising from one of two sources; either from some organic affection of the parts here principally concerned, or from a mere atonic state of the parts without any obvious affection. The sense of smelling may be diminished or destroyed by various diseases of the parts; as, the moisture, dryness, inflammation or suppuration of that membrane which lines the inside of the nose commonly called the *olfactory membrane*; the compression of the nerves which supply this membrane, or some fault in the brain itself at their origin. A defect, or too great a degree of solidity, of the small spongy bones of the upper jaw, the caverns of the forehead, &c. may likewise impair the sense of smelling. It may also be injured by a collection of fetid matter in those caverns, which keeps constantly exhaling from them. Few things are more hurtful to the sense of smelling than taking great quantities of snuff.

Cure. When the nose abounds with moisture, after gentle evacuations, such things as tend to take off irritation and coagulate the thin sharp serum may be applied; as the oil of anise mixed with fine flour, camphire dissolved in oil of almonds, &c. The vapours of amber, frankincense, gum-mastic, and benjamin, may likewise be received into the nose and mouth. For moistening the mucus when it is too dry, some recommend snuff made of the leaves of marjoram, mixed with oil of amber, and aniseed; or a sternutatory of calcined white vitriol, 12 grains of which may be mixed with two ounces of marjoram-water and filtrated. The steam or vapour of vinegar thrown upon hot iron received up the nostrils is likewise of use for softening the mucus, opening obstructions, &c.

If there be an ulcer in the nose, it ought to be dressed with some emollient ointment, to which, if the pain be very great, a little laudanum may be added. If it be a venereal ulcer, it is not to be cured without mercury. In that case, the solution of the corrosive sublimate in brandy may be taken, as directed in the gutta serena. The ulcer ought likewise to be washed with it; and the fumes of cinabar may be received up the nostrils.

If there be reason to suspect that the nerves which supply the organs of smelling are inert or want stimulating, volatile salts, strong snuffs, and other things which occasion sneezing, may be applied to the nose. The forehead may likewise be anointed with balsam of Peru, to which may be added a little of the oil of amber.

GENUS XCIX. AGEUSTIA.

Defect of TASTING.

Ageusia, *Sauv.* gen. 157. *Sag.* 263.Ageusia, *Lin.* 114.Apogeusia, *Vog.* 449.

Cause. This disease also may arise either from an organic affection, or an atonic state of the parts. The N^o 208.

taste may be diminished by crusts, filth, mucus, *Ageusia.* aphthæ, pellicles, warts, &c. covering the tongue; it may be depraved by a fault of the saliva, which, being discharged into the mouth, gives the same sensation as if the food which the person takes had really a bad taste; or it may be entirely destroyed by injuries done to the nerves of the tongue and palate. Few things prove more hurtful either to the sense of tasting or smelling than obstinate colds, especially those which affect the head.

Cure. When the taste is diminished by filth, mucus, &c. the tongue ought to be scraped, and frequently washed with a mixture of water, vinegar, and honey, or some other detergent. When the saliva is vitiated, which seldom happens unless in fevers or other diseases, the curing of the disorder is the cure of this symptom. To relieve it, however, in the mean time, the following practices may be of use: if there be a bitter taste, it may be taken away by vomits, purges, and other things which evacuate bile: what is called a *nidorous taste*, arising from putrid humours, is corrected by the juice of citrons, oranges, and other acids: a salt taste is cured by plentiful dilution with watery liquors: an acid taste is destroyed by absorbents and alkaline salts, as powder of oyster-shells, salt of wormwood, &c.

When the sensibility of the nerves which supply the organs of taste is diminished, the chewing of horse-radish, or other stimulating substances, will help to recover it.

GENUS C. ANÆSTHESIA.

Defect of the Sense of FEELING.

Anæsthesia, *Sauv.* gen. 161. *Lin.* 218. *Vog.* 267.

Causes, &c. This sense may be hurt by any thing that obstructs the nervous influence, or prevents its being regularly conveyed to the organs of touching, as pressure, extreme cold, &c. It may likewise be hurt by too great a degree of sensibility, when the nerve is not sufficiently covered by the cuticle or scarf-skin, or where there is too great a tension of it, or it is too delicate. Whatever disorders the functions of the brain and nerves, hurts the sense of touching. Hence it appears to proceed from the same general causes as palsy and apoplexy, and requires nearly the same method of treatment.

In a *stupor*, or defect of touching, which arises from an obstruction of the cutaneous nerves, the patient must first be purged; afterwards such medicines as excite the action of the nerves, or stimulate the system, may be used. For this purpose, the spirit of hartshorn, either by itself or combined with essential oils, horse-radish, &c. may be taken inwardly; the disordered parts, at the same time, may be frequently rubbed with fresh nettles or spirit of sal ammoniac. Blisters and sinapisms applied to the parts will likewise be of use; and also warm bathing, especially in the natural hot-baths.

ORDER II. DYSOSEXIAE.

SECT. I. APPETITUS ERRONEI.

Morositates, *Sauv.* Class VIII. Order II. *Sag.*
Class XIII. Order II.

6

Pathetici,

Dysorexia

Pathetici, *Lin.* Class V. Order II.
Hyperæstheses, *Vog.* Class VII.

369

GENUS CI. BULIMIA.

INSATIABLE HUNGER, or *Canine Appetite*.Bulimia, *Sauv.* gen. 223. *Lin.* 79. *Sag.* gen. 335.Bulimus, *Vog.* 296.Addephagia, *Vog.* 297.Cynorexia, *Vog.* 298.

This disease is commonly owing to some fault in the stomach, by which the aliments are thrown out too soon; and unless the person be indulged in his desire for eating, he frequently falls into fainting fits. Sometimes it is attended with such a state of the stomach, that the aliment is rejected by vomit almost immediately after being swallowed; after which the appetite for food returns as violent as ever. But there are many circumstances which seem to render it probable that it more frequently arises from a morbid condition of the secreted fluid poured into the stomach, by means of which the aliment is dissolved. When the activity of this fluid is morbidly increased, it will both produce too sudden a solution of the solid aliment, and likewise operate as a powerful and peculiar stimulus to the stomach, giving an uneasy sensation, similar to that which takes place in natural hunger. Such things are proper for the cure as may enable the stomach to perform its office: chalybeates and other tonics will generally be proper. In some, brandy drunk in a morning has been useful; and frequent smoking tobacco has relieved others. Oil, fat meat, pork, opiates, and in short every thing which in a sound person would be most apt to pall the appetite, may also be used as temporary expedients, but cannot be expected to perform a cure. In some, the pylorus has been found too large; in which case the disease must have been incurable.

370

GENUS CII. POLYDIPSIA.

EXCESSIVE THIRST.

Polydipsia, *Sauv.* gen. 224. *Lin.* 80. *Vog.* 275.
Sag. 336.

This is almost always symptomatic; and occurs in fever, dropsy, fluxes, &c. The cure is very generally obtained only by the removal of the primary disease; and it is best palliated by the gradual introduction of diluents: But when these are contraindicated, it may often be successfully obviated by such articles taken into the mouth as have effect in augmenting the flow of saliva.

371

GENUS CIII. PICA.

LONGING, or *False Appetite*.Pica, *Sauv.* gen. 222. *Sag.* 334.Citta, *Lin.* 78.Allotriophagia, *Vog.* 299.Malacia, *Vog.* 300.

The pica is also very generally symptomatic of other diseases, as of worms, chlorosis, pregnancy, &c.; and is therefore chiefly to be combated by the removal of the primary affection. It may, however, be observed, that peculiar longings occurring in certain dis-

VOL. XI. Part I.

eases, as for example in fevers, often point out a natural cure. The indulgence of such appetites to a moderate degree is seldom productive of any inconvenience, and often followed by the best consequences.—Hence there are some practitioners who think that such craving should very generally be indulged; particularly when the patient can assign no reason whatever for such particular longings, but is merely prompted by an uncommon and inexplicable desire.

Pica.

GENUS CIV. SATYRIASIS.

372

Satyriasis, *Sauv.* gen. 228. *Lin.* 81. *Sag.* 340.

Satyriasis is a violent desire of venery in men, even so that reason is depraved by it. The pulse is quick, and the breathing short; the patient is sleepless, thirsty, and loathes his food; the urine is evacuated with difficulty, and a fever soon comes on. These symptoms, however, are probably not so much the consequence of satyriasis, as merely concomitant effects resulting from the same cause. And indeed this affection is most frequently the concomitant of a certain modification of insanity. The nature and cause of this affection are in most instances very little ascertained; but as far as we are acquainted with the treatment, it agrees very much with the affection next to be mentioned, which, of the two, is the most common occurrence.

GENUS CV. NYMPHOMANIA.

FUROR UTERINUS.

373

Nymphomania, *Sauv.* 229. *Sag.* 341.Satyriasis, *Lin.* 81.

The *furor uterinus* is in most instances either a species of madness or an high degree of hysterics. Its immediate cause is a preternatural irritability of the uterus and pudenda of women (to whom the disorder is proper), or an unusual acrimony of the fluids in these parts.—Its presence is known by the wanton behaviour of the patient: she speaks and acts with unrestrained obscenity; and as the disorder increases, she scolds, cries, and laughs, by turns. While reason is retained, she is silent, and seems melancholy, but her eyes discover an unusual wantonness. The symptoms are better and worse until the greatest degree of the disorder approaches, and then by every word and action her condition is too manifest.—In the beginning a cure may be hoped for; but if it continue, it degenerates into a mania.—In order to the cure, blood-letting is commonly had recourse to in proportion to the patient's strength. Camphor in doses of 15 or 20 grains, with nitre, and small doses of the tincture of opium, should be repeated at proper intervals. Some venture to give cerusa acetata in doses from three to five grains. Besides bleeding, cooling purges should also be repeated in proportion to the violence of symptoms, &c. What is useful in maniacal and hypochondriac disorders, is also useful here, regard being had to sanguine or phlegmatic habits, &c. When the delirium is at the height, give opiates to compose; and use the same method as in a phrenitis or a mania. Injections of barley-water, with a small quantity of hemlock-juice, according to Riverius, may be frequently thrown up into the uterus:

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Dyforexia this is called *specific*; but matrimony, if possible, should be preferred. For although this cannot be represented as a cure for the disease when in an advanced state, yet there is reason to believe that it has not unfrequently prevented it where it would otherwise have taken place.

374

GENUS CVI. NOSTALGIA.

*Veheement DESIRE of REVISITING one's COUNTRY.*Nostalgia, *Sauv.* gen. 226. *Lin.* 83. *Sag.* 338.

This is to be reckoned a species of melancholy; and unless it be indulged, it very commonly proves not only incurable but even fatal. Although it cannot be considered as altogether peculiar to any nation, yet it is observed to be much more frequent with some than with others; and it has particularly been remarked among Swiss soldiers in the service of foreign states.

SECT. II. APPETITUS DEFICIENTES.

Anepithymia, *Sauv.* Class VI. Ord. II. *Sag.* IX. Ord. II.Privativi, *Lin.* Class VI. Order III.Adynamia, *Vog.* Class VI.

375

GENUS CVII. ANOREXIA.

*Want of APPETITE.*Anorexia, *Sauv.* gen. 162. *Lin.* 116. *Vog.* 279. *Sag.* 268.

The anorexia is symptomatic of many diseases, but seldom appears as a primary affection; and it is very generally overcome only by the removal of the affection on which it depends.

376

GENUS CVIII. ADIPSIA.

*Want of THIRST.*Adipsia, *Sauv.* gen. 163. *Lin.* 117. *Vog.* 281. *Sag.* 269.

This by Dr Cullen is reckoned to be always symptomatic of some distemper affecting the *sensorium commune*.

377

GENUS CIX. ANAPHRODISIA.

*Impotence to VENERY.*Anaphrodisia, *Sauv.* gen. 164. *Sag.* 270.Atecnia, *Lin.* 110.Agenesia, *Vog.* 283.

For this, see the article IMPOTENCE in the alphabetical order.

378

ORDER III. DYSCINESIAE.

379

GENUS CX. APHONIA.

*Loss of VOICE.*Aphonia, *Sauv.* gen. 166. *Lin.* 115. *Vog.* 253. *Sag.* 272.

The loss of voice may proceed from various causes. If one of the recurrent nerves, which are formed by the *par vagum* and the *nervus accessorius*, and reach the larynx, be cut, the person is capable of only as it were a half-pronunciation; but if both be cut, the

speech and voice are both lost. The loss of speech happening in hysteric patients is also called *aphonia*; but more properly that loss of speech is thus named which depends on some fault of the tongue.

Seeing that the motion of any part is destroyed, or lessened at least, by the interception of the nervous fluid in its passage thither, and that the nerves destined for the motion of the tongue arise principally from the fifth pair, it appears that the seat of this disorder is in the said fifth pair of nerves, and that the immediate cause is a diminution or total destruction of the nervous power in them. Hence a palsy of the tongue, which is either antecedent or subsequent to hemiplectic or apoplectic disorders, demand our utmost attention.

If an aphonia appears alone, it generally bespeaks an approaching hemiplegia or apoplexy; but if it succeed these disorders, and is complicated with a weak memory and a sluggishness of the mental powers, it threatens their return. That aphony usually terminates the best which proceeds from a stagnation of ferous humours compressing the branches of the fifth pair of nerves, which run to the tongue; but it is no less afflictive to the patient, and is very obstinate of cure.

Other causes of this disorder are, the striking in of eruptions on the skin, a congestion of blood in the fauces and tongue, obstructed periodical evacuations in plethoric habits, spasmodic affections, worms, a crumb of bread falling into the larynx, fear, too free an use of spirituous liquors; also whatever destroys the ligaments which go from the arytaenoid to the thyroid cartilages, will destroy the voice.

The *prognostics* vary according to the cause or causes. That species which is owing immediately to spasms, soon gives way on the removal of them. If a palsy of the tongue be the cause, it is very apt to return, tho' relieved, but often continues incurable.

In order to the *cure*, we must endeavour first to remove whatever obstructs the influx of the nervous fluid into the tongue, and secondly to strengthen the weak parts. These general intentions, in all cases, being regarded, the particular causes must be removed as follows:

If worms be the cause, antispasmodics may give present relief; but the cure depends on the destruction or expulsion of the animals themselves. In case of a congestion of blood about the head, bleeding and nitrous medicines are to be used.—That species of aphony which remains after the shock of an hemiplegia or apoplexy, requires blisters to be applied to the nape of the neck; other means are rarely effectual.—If spasmodic constrictions about the fauces and tongue be the cause, external paregorics are of the greatest service, anodyne antispasmodics may be laid under the tongue, and the feet bathed in warm water; carminative clysters also are useful.—When a palsy of the tongue produces this complaint, evacuations, according to the patient's habit, must be made, and warm nervous medicines must be externally applied, and internally administered; blisters also should be placed between the shoulders.—In case of repelled cuticular eruptions, sudorifics should be given, and the patient's drink should be warm. The spiritus ammoniac succinatus, or vinum antimonii, may be employed either in combination.

Dyscinesia tion with other articles or by themselves, and given, at proper distances of time, in the patient's drink, or on a lump of sugar.—Sometimes the serum flows so rapidly to the fauces and adjacent parts, in a salivation, as to deprive the patient of all power to speak; in this case diaphoretics and laxatives, with a forbearance of all mercurials, are the speediest remedies.

380

GENUS CXI. MUTITAS.
DUMBNESS.

Mutitas, *Sauv.* gen. 165. *Vog.* 257. *Sag.* 271.

Dumb people are generally born deaf; in which case the distemper is incurable by medicine: though even such people may be taught not only to read and write, but also to speak and to understand what others say to them. For some observations on the method in which this has been accomplished, we may refer the reader to the article DUMBNESS in the alphabetical order. But in these cases, admitting of cure in the manner above alluded to, the dumbness proceeds principally, if not solely, from the deafness. For when it proceeds from a defect of any of the organs necessary for speech, the tongue for instance, it is always incurable; but if it arise from a palsy, the medicines applicable in that case will sometimes restore the speech.

381

GENUS CXII. PARAPHONIA.
Change in the Sound of the Voice.

Paraphonia, *Sauv.* gen. 168.

Cacophonia, *Sag.* 274.

Raucedo, *Lin.* 146.

Raucitas, *Vog.* 252.

Afaphia, &c. *Vog.* 250, 251, 254, 255, 256.

The voice may be changed from various causes. In males it becomes much more hard about the time of puberty; but this can by no means be reckoned a disease. In others it proceeds from a catarrh, or what we call a cold; it arises also from affection of the nose and palate, as polypi, ulcers, &c. in which case the cure belongs properly to SURGERY. In some it arises from a laxity of the *velum pendulum palati* and glottis, which makes a kind of snoring noise during inspiration. The cure of this last case is to be attempted by tonics and such other medicines as are of service in diseases attended with laxity.

382

GENUS CXIII. PSELLISMUS.
Defect in PRONUNCIATION.

Psellismus, *Sauv.* gen. 167. *Lin.* 138. *Sag.* 273.

Traulotis, &c. *Vog.* 258, 259, 260, 261.

Of this disease (if such it may be called), there are many different kinds. Some cannot pronounce the letter S; others labour under the same difficulty with R, L, M, K. &c.; while some who can with sufficient ease pronounce all the letters, yet repeat their words, or the first syllables of them, in such a strange manner, that they can scarce be understood. Very frequently these defects arise entirely from habit, and may then be got the better of by those who have the resolution to attempt it; as we are told that Demosthenes the celebrated orator got the better of a

habit of stammering by declaiming with pebbles in his mouth. Sometimes, however, pronunciation may be impeded by a wrong conformation of the tongue or organs of speech; and then it cannot by any pains whatever be totally removed.

GENUS CXIV. STRABISMUS.
SQUINTING.

383

Strabismus, *Sauv.* gen. 116. *Lin.* 304. *Vog.* 514. *Sag.* 222.

Description. This disease shows itself by an uncommon contraction of the muscles of the eye; whereby the axis of the pupil is drawn towards the nose, temples, forehead, or cheeks, so that the person cannot behold an object directly.

Causes, Prognosis, &c. I. This disease may proceed from custom and habit; while in the eye itself, or in its muscles, nothing is preternatural or defective.

Thus children by imitating those that squint, and infants by having many agreeable objects presented to them at once, which invite them to turn one eye to one and the other eye to another, do frequently contract a habit of moving their eyes differently, which afterwards they cannot so easily correct. Infants likewise get a custom of squinting by being placed obliquely towards a candle, window, or any other agreeable object capable of attracting their sight: for though, to see the object, they may at first turn both eyes towards it; yet, because such an oblique situation is painful and laborious, especially to the most distant eye, they soon relax one of the eyes, and content themselves with examining it with the eye that is next it; whence arises a diversity of situation and a habit of moving the eyes differently.

In this case, which may admit of a cure if not too much confirmed, it is evident, that objects will be seen in the same place by both eyes, and therefore must appear single as to other men; but because, in the eye that squints, the image of the object to which the other eye is directed falls not on the most sensible and delicate part of the retina, which is naturally in the axis of the eye, it is easy to see that it must be but faintly perceived by this eye. Hence it is, that while they are attentive in viewing any object, if the hand be brought before the other eye, this object will be but obscurely seen, till the eye change its situation, and have its axis directed to it; which change of situation is indeed very easy for them, because it depends on the muscles of the eyes, whose functions are entire; but, by reason of the habit they have contracted of moving their eyes differently, the other eye is at the same time frequently turned aside, so that only one at a time is directed to the object.

That all this may be the better perceived; for an object, cause them to look at the image of the upper part of your nose in a plain mirror, while you stand directly behind them, to observe the direction of their eyes.

II. The *strabismus* may proceed from a fault in the first conformation, by which the most delicate and sensible part of the retina is removed from its natural situation, which is directly opposite to the pupil, and is placed a little to a side of the axis of the eye; which obliges them to turn away the eye from the object

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Dyscinesia they would view, that its picture may fall on this most sensible part of the organ.

When this is the case, the disease is altogether incurable, and the phenomena that arise therefrom differ in nothing from the phenomena of the former case, excepting only that here, 1. The object to which the eye is not directed will be best seen; which is the reverse of what happens when this disease arises barely from habit and custom. 2. No object will appear altogether clear and distinct: for all objects to which the eye is directed, by having their image painted in the retina at the axis of the eye, where it is not very sensible, will be but obscurely seen; and objects that are placed so far to a side of the optic axis as is necessary for making their image fall on the most sensible and delicate part of the retina, must appear a little confused, because the several pencils of rays that come therefrom fall too obliquely on the crystalline to be accurately collected in so many distinct points of the retina; though it must be acknowledged, that this confusion will, for the most part, be so small as to escape unobserved.

III. This disease may proceed from an oblique position of the crystalline, where the rays that come directly to the eye from an object, and that ought to converge to the point of the retina, which is in the axis of the eye, are, by reason of the obliquity of the crystalline, made to converge to another point on that side of the visual axis where the crystalline is most elevated; and therefore the object is but obscurely seen, because its image falls not on the retina at the axis of the eye, where it is most sensible: But the rays that fall obliquely on the eye, will, after refraction, converge to this most sensible part of the retina; and, by converging there, must impress the mind with a clearer idea of the object from whence they came. It is for this reason that the eye never moves uniformly with the other, but turns away from the object it would view, being attentive to the object to which it is not directed. When this is the case, it is in vain to expect any good from medicine.

The symptoms that naturally arise from it are, 1. The object to which the eye is directed will be but faintly seen, because its image falls on the retina where it is not very sensible. 2. The object to which the eye is not directed, by having its image painted on the retina at the axis of the eye, will be clearly perceived. But, 3. This same object must appear somewhat indistinct, because the pencils of rays that flow from it are not accurately collected in so many distinct points in the retina, by reason of their oblique incidence on the crystalline. 4. It must be seen, not in its proper place, but thence translated to some other place situated in the axis of vision. And, 5. Being thus translated from its true place, where it is seen by the other eye that does not squint, it must necessarily appear double; and the distance between the places of its appearance will be still greater, if the crystalline of the other eye incline to the contrary side.

IV. This disease may arise from an oblique position of the cornea; which, in this case, is generally more arched and prominent than what it is naturally.

When the eye has this conformation, no object to which it is directed can be clearly seen, because its image falls not on the retina at the axis of the eye; and therefore the eye turns aside from the object it would view, that its image may fall on the most sensible part of the retina.

When the strabismus proceeds from this cause, the prognostic and the phenomena that attend it will be much the same as in the case immediately preceding; from which nevertheless it may be distinguished by the obliquity of the cornea, which is manifest to the senses and if the cornea be also more arched and prominent than what it is naturally, which is commonly the case, the eye will also be short-sighted.

V. This want of uniformity in the motions of our eyes, may arise from a defect, or any great weakness or imperfection, in the sight of both or either of the eyes; and this, according to Dr Porterfield, is the most common cause of this disease. The prognostic in this case is the same with that of the disease from which it proceeds.

VI. Another cause from which the strabismus may proceed, lies in the muscles that move the eye. When any of those muscles are too short or too long, too tense or too lax, or are seized with a spasm or paralysis, their equilibrium will be destroyed, and the eye will be turned towards or from that side where the muscles are faulty.

In this case, the disease frequently yields to medicine, and therefore admits of favourable prognostic; excepting only when, by a fault in the first conformation, any of the muscles are longer or shorter than their antagonist; in which case, if ever it should happen, no medicine can be of any use.

As to what concerns the optical phenomena, they are the same here as in case first: only when the disease commences not till, by custom and habit, the uniform motion of the eyes has been rendered necessary, all objects do for some time appear double; but in time they appear single.

Lastly, This want of uniformity in the motions of our eyes may proceed from a preternatural adhesion or attachment to the eye-lids: of this we have an instance in Langius. And that the same thing may also be occasioned by a tumor of any kind within the orbit, pressing the eye aside, and restraining it from following the motions of the other, is so evident, that instances need not be brought to prove it. Here also the case may admit of a favourable prognostic; and as for what concerns the optical phenomena, they must be the same as in the case immediately preceding.

The cure, in confirmed cases, is to be effected by mechanical contrivances, by which the person may be obliged to look straight upon objects, or not see them at all; or at least that he may see with uneasiness and confusedly when he squints. In the 68th volume of the Philosophical Transactions we have an account of a confirmed case of squinting of a very uncommon kind. The patient was a boy of five years old, and viewed every object which was presented to him with but one eye at a time. If the object was presented on his right side, he viewed it with his left eye; and if it was presented on his left side, he viewed it with his right eye. He turned the pupil of that

eye

Dyscinesia eye which was on the same side with the object in such a direction that the image of the object might fall on that part of the bottom of the eye where the optic nerve enters it. When an object was held directly before him, he turned his head a little to one side, and observed it with but one eye, viz. that most distant from the object, turning away the other in the manner above described; and when he became tired of observing it with that eye, he turned his head the contrary way, and observed it with the other eye alone, with equal facility; but never turned the axis of both eyes on it at the same time. He saw letters which were written on bits of paper, so as to name them with equal ease, and at equal distances, with one eye as with the other. There was no perceptible difference in the diameters of the irises, nor in the contractility of them after having covered his eyes from the light. These observations were carefully made by writing single letters on shreds of paper, and laying wagers with the child that he could not read them when they were presented at certain distances and in certain directions.

As from these circumstances it appeared that there was no defect in either eye, which is frequently the case with persons who squint, and hence that the disease was simply a depraved habit of moving his eyes, the disease seemed capable of a cure. A paper gnomon was made for this purpose, and fixed to a cap; and when this artificial nose was placed over his real nose, so as to project an inch between his eyes, the child, rather than turn his head so far to look at oblique objects, immediately began to view them with that eye which was next to them. But having the misfortune to lose his father soon after this method was begun to be followed, the child was neglected for six years, during which time the habit was confirmed in such a manner as seemed to leave little room to hope for a cure. The same physician, however, being again called, attempted a second time to remove the deformity by a similar contrivance. A gnomon of thin brass was made to stand over his nose, with a half circle of the same metal to go round his temples: these were covered with black silk, and by means of a buckle behind his head, and a cross-piece over the crown of his head, this gnomon was worn without any inconvenience, and projected before his nose about two inches and an half. By the use of this machine he soon found it less inconvenient to view all oblique objects with the eye next to them instead of the eye opposite to them.

After this habit was weakened by a week's use of the gnomon, two bits of wood, about the size of a goose-quill, were blackened all but a quarter of an inch at their summits; these were frequently presented to him to look at, one being held on one side the extremity of his black gnomon, and the other on the other side of it. As he viewed these, they were gradually brought forwards beyond the gnomon, and then one was concealed behind the other: by these means, in another week, he could bend both his eyes on the same object for half a minute together; and by continuing the use of the same machine, he was in a fair way of being cured when the paper was written.

Dr Darwin, who writes the history of the above case, adds, that all the other squinting people he had occasion to attend, had one eye much less perfect than

the other: these patients, says he, are certainly cured. *Strabismus*. able by covering the best eye many hours in a day; as by a more frequent use of the weak eye, it not only acquires a habit of turning to the objects which the patient wishes to see, but gains at the same time a more distinct vision; and the better eye at the same time seems to lose somewhat in both these respects, which also facilitates the cure.

GENUS CXV. CONTRACTURA.

384

Contractions of the LIMBS.

Contractura, *Sauv.* gen. 119. *Lin.* 299. *Sag.* 225.
Obstipitas, *Sauv.* gen. 11.
Caput obstipum, *Vog.* 513.
Digitum, *Vog.* 221.

The contraction of various muscles of the body is generally the consequence of some other disease, as the rheumatism, gout, scurvy, or palsy, especially that species of the latter which follows the *colica Pictonum*. It is exceedingly difficult of cure; though the warm medicinal waters are much recommended, and have sometimes done great service. Of late electricity has been found to perform surprising cures in this way.

ORDER IV. APOCENOSES.

385

Apocenoses, *Vog* Class II. Ord. II.
Fluxus, *Sauv.* Class IX. *Sag.* Class V.
Morbi evacuatorii, *Lin.* Class IX.

GENUS CXVI. PROFUSIO.

386

FLUX of BLOOD.

Profusio *Lin.* 239.
Hæmorrhagia, *Vog.* 81. *Boerb.* 218.

The disease commonly known by the name of *bloody flux*, is the putrid or contagious dysentery, a disease which has already been treated of. But independent of the discharge of blood which then takes place, hæmorrhagy may take place from the alimentary canal as well as from other parts of the system. In such instances, however, if we except the place from which the discharge occurs, the phenomena are very much the same as in menorrhagia, hæmoptysis, and other hæmorrhagies already treated of; while the disease is to be combated on the same principles and by the same remedies.

GENUS CXVII. EPIDROSIS.

387

Excessive SWEATING.

Epidrosis, *Sauv.* gen. 258. *Sag.* gen. 194.
Sudor, *Lin.* 208.
Hydropedesis, *Vog.* 121.

This is generally symptomatic; and occurs in almost all fevers, but especially in the latter stages of the hectic. Sometimes it is a primary disease, arising merely from weakness; and then easily admits of a cure by the use of the Peruvian bark, the cold bath, and other tonics.

GENUS CXVIII. EPIPHORA.

388

FLUX of the LACHRYMAL HUMOUR.

Epiphora, *Sauv.* gen. 259. *Lin.* 172. *Vog.* 99.
Sag. 195.

This by Sauvages is described as an involuntary effusion

Apocynoses effusion of tears without any remarkable itching, heat, or pain. It follows long-continued ophthalmias; or it may be occasioned by immoderate study, or any thing that weakens the eyes: hence it comes on about the age of 50 years, when the eyesight naturally becomes weak. It in general grows worse in the winter-time, and is very hard to cure. Some authors recommend purgatives, and blisters on the nape of the neck, in order to draw off the abundant humours; but as the disease evidently proceeds from weakness, it would rather seem proper to pursue a contrary method. Sauvages recommends to the patients to abstain from study, wine, and salted meats; and also to avoid smoke or wind, and at night to foment the eyes with an infusion of four cloves in two ounces of proof-spirit.—Hungary water, rose water with white vitriol dissolved in it, &c. have also been recommended.

389

GENUS CXIX. PTYALISMUS.

SALIVATION.

Ptyalismus, Sauv. gen. 261. Lin. 176. Vog. 103. Sag. 197.

A salivation is often symptomatic, but rarely a primary disease. Dr Cullen is of opinion, that when the latter happens to be the case, it arises from laxity; and then is to be cured by astringents and tonics. In the Medical Transactions we have the following account of a salivation brought on by a foreign substance irritating one of the parotid glands.

In the month of April 1751, a young lady about the age of 16 years, of a delicate habit, but subject to no particular complaints, perceived the beginning of a disease which afterwards proved most obstinate and loathsome, viz. an incessant spitting. The quantity of this discharge was different at different times, varying from one pint to two pints and an half in 24 hours. As to its quality, it seemed to be no other than the ordinary secretion of the salival glands. By so large and constant an evacuation, her strength became extremely impaired, and the most efficacious medicines had proved useless. She had taken large quantities of the Peruvian bark, both alone and combined with preparations of iron: and afterwards the fetid gums, opium, amber, alum, and the Neville-Holt-water, had in succession been given her. In the mean time an exact regimen had been prescribed: she had been ordered to ride constantly; and to confine herself to a mucilaginous diet, such as veal, calves feet, &c. Likewise a gently opening medicine had now and then been interposed. The disease still continued unaltered, she had afterwards tried the *tinctura saturnina*; and had, at the same time, been encouraged to chew the Peruvian bark, and to swallow the saliva. But all these attempts had been vain; and after she had taken some or other of the medicines above mentioned until the end of September 1753, namely, above two years, it appeared to her physician, Sir George Baker, unreasonable to expect relief in such a case from any internal medicines whatever.

He now conceived a suspicion, that some extraneous body having accidentally found its way into the *meatus auditorius*, might possibly be the cause of this extraordinary secretion, by keeping up a continued irritation in the parotid glands. With this view he ex-

amined her ears, and extracted from them a quantity of fetid wool. How, or when, it came thither, no account could be given.

To this substance he attributed the beginning of the salivation, notwithstanding that the disease did not immediately abate on the removal of the wool; as it appeared to be no improbable supposition that the discharge might be continued by the force of habit, though the original cause no longer remained.

It seemed therefore expedient to introduce some other habit, in the place of the increased secretion of saliva; which habit might afterwards be gradually left off. With this intention, he prevailed on the patient to chew perpetually a little dry bread, and to swallow it with her spittle. In a few weeks, it became necessary for her to chew the bread only at certain hours in the day; and thus, after two months, she became entirely free from a most disgusting and tedious disorder.

It is worthy of observation, that, at first, the swallowing of so much saliva frequently occasioned a nausea; and that then, for a few hours, she was obliged to spit it out as usual; and that, during the greatest part of the time, when she chewed the bread, she had a stool or two every day more than common.

GENUS CXX. ENURESIS.

An involuntary FLUX of URINE.

390

Enuresis, Sauv. gen. 264. Lin. 195. Vog. 113. Sag. 200.

THIS is a distemper which frequently affects children, otherwise healthy, when asleep; and is extremely disagreeable. Often it is merely the effect of laziness, and may be driven off by proper correction; but sometimes it proceeds from an atony or weakness of the sphincter of the bladder. Many ridiculous cures have been prescribed for it, and among the rest field-mice dried and powdered. Tonics are frequently of use; but sometimes the distemper proves obstinate, in spite of every thing we can use. In the London Medical Observations we find blisters much recommended in this disease, when applied to the region of the os sacrum. A girl of 13 years of age had been subject to an enuresis for four years. She could retain her water but a very little while in the day-time, but it flowed continually in the night. She had taken Peruvian bark and elixir of vitriol in considerable quantities; also Valerian and the volatile julep, without effect. She was severely threatened, as the physician suspected it might arise from a bad habit; but this producing no effect, a blister was applied to the os sacrum, which in 24 hours totally removed the disease. A man aged 32, having been seized with an incontinence of urine and palsy of the lower extremities in consequence of taking a quack medicine, was cured of the incontinence of urine in 24 hours by one blister, and of the palsy itself by another. A woman of 50 having been seized with an enuresis and paralytic affection of the right thigh and leg in consequence of a strain, was cured of both by a single blister. Several other cases are there mentioned, by which the power of blisters in removing this distemper seems to exceed that of every other medicine whatever.

Gonorrhœa, *Sauv.* gen. 208. *Lin.* 200. *Vog.* 118. *Sag.* 204.

THE gonorrhœa is a flux of viscid matter of various colours, from the urethra in men and the vagina in women. It commonly proceeds from coition with a person infected with the venereal disease, and is one of the most common forms under which that disease shows itself.

Description. The first symptoms of the disease in men are commonly a sensation at the end of the penis not unlike a flea-bite, together with a fulness of the lips of the urethra, and some degree of tension in the penis, the urinary canal feeling as if tightened, and the urine flowing in a small and unequal stream: a little whitish mucus is to be seen about the orifice of the urethra, and oozing from it when slightly pressed, especially if the pressure be made on the spot where the forenefs is most felt. The discharge soon increases in quantity, and varies in its colour according to the degree of inflammation. The patient feels a sensation of heat and pain in evacuating his urine, particularly at certain spots of the urethra, and above all towards its orifice; and the involuntary erections to which he is subjected from the stimulus, particularly when warm in bed, occasion a distortion or curvature of the penis, attended with exquisite pain. When the inflammation is violent, the glans appears tumid and transparent, the tension extends through the whole of the penis, the perinæum is affected with swelling and redness, and even the loins, buttocks, and anus, sympathize and afford a very uneasy sensation. Sometimes the prepuce inflames about the end of the penis, and cannot be drawn back, occasioning what is called a *phymosis*; at other times, as in the *paraphymosis*, it remains in an inflamed state below the glans, so that it cannot be drawn forwards; and, if the stricture and inflammation be violent, may terminate in gangrene. Now and then, especially when there is a *phymosis*, we may perceive a hard chord extending along the back of the penis. This is an inflamed lymphatic, and may be considered as a prelude to a bubo. When, however, a bubo does appear, almost universally some ulceration is previously to be discovered about the præputium, or glans penis; which gives ground to presume that some other contagious matter besides that of gonorrhœa may have been applied to the urethra. For it is certain that matter capable of communicating the contagion of gonorrhœa to a female, is often copiously applied to the whole glans penis of a male for several days together, without giving either ulceration or bubo.

In mild cases, the seat of the disease is in the urethra, not far from its orifice; but it frequently happens that the virus insinuates itself much higher up, so as to affect Cowper's glands, the prostate, and parts very near to the neck of the bladder.

In the generality of cases, the inflammation goes on increasing for several days, commonly for a week or a fortnight; after which the symptoms begin to abate; and the running, when left to itself, gradually lessens in quantity, and becomes whiter and thicker, till at length it totally stops. The colour of the mucus, however, is by no means a certain guide in these cases:

for in many patients it is of a yellowish, and sometimes of a greenish hue to the very last; but in general it becomes more consistent towards the close of the disease.

In women, the external parts of generation being fewer and more simple, the disease is less complicated than in men. Sometimes the vagina only is affected; and when this happens, the symptoms are very trifling: but in general it comes on with an itching and sensation of heat as in the other sex; and is attended with inflammation of the nymphæ, inside of the *labia*, *clitoris*, *caruncula myrtiformes*, the orifice and sometimes the whole of the *meatus urinarius*. Very often the deep-seated glands of the vagina are affected, and it is sometimes difficult to distinguish the discharge of a gonorrhœa from that of the fluor albus.

Causes, &c. Many ingenious arguments have of late been advanced to prove, that the gonorrhœa and the lues venerea are different affections, originating from two distinct species of virus; and this controversy still, perhaps, remains to be decided by future facts. Certain it is, that in 19 of 20 cases of gonorrhœa, no symptom whatever of syphilis appears; and that the disease readily admits of cure without having recourse to those remedies which are universally requisite for combating the contagion of syphilis. It is by no means wonderful, that in some cases both contagions, supposing them different, should be communicated at the same time. Nay, cases are by no means rare, where the contagion of itch, though essentially different from both, has been communicated with either. But as undeniable proof that the contagion in both cases is precisely the same, it has been alleged by some, that the matter of a chancre introduced into the urethra will generate a gonorrhœa, and that the discharge from a gonorrhœa will produce chancre, bubo, and every other symptom of syphilis. On the other hand, however, it is contended, that when experiments of this nature are conducted with the greatest accuracy, the matter of syphilis uniformly produces syphilis, and that of gonorrhœa, gonorrhœa only. Without pretending to decide on which of these experiments the greatest dependence is to be put, we may only observe, that while an almost inconceivably small portion of syphilitic matter applied to the glans penis, from connection with an infected female, infallibly produces syphilis if it be not speedily removed, the matter of gonorrhœa, in every instance of that disease, is applied to the whole surface of the glans penis for many days together without producing almost any bad effect whatever. From this, therefore, there is ground for inferring, either that it is not capable of being absorbed, or that if absorbed it is innocent.

But while there have been disputes with regard to the peculiar nature of the matter in gonorrhœa, there have also been controversies with respect to the source from whence it is derived. While some suppose it to be principally purulent matter arising from ulcerations, others assert that no such ulceration is ever produced in the urethra by gonorrhœa. They contend that the increased secretion in these cases is exactly similar to what happens in the catarrh. But the comparison will by no means hold good in every particular: in the latter the whole membrane of the nose is equally irritated; whereas in the gonorrhœa, only particular parts

Apocenes of the urethra seem to be affected. The disease, in the generality of cases, seldom extends more than an inch and a half along that canal, and in many is confined (at least in the beginning) to a small spot about an inch from the extremity of the glans. The discharge is produced from that part of the urethra where the pain is felt; and the patient, when he voids his urine, feels no smarting till it reaches the inflamed spot: but as the disorder increases, the inflammation affects a greater number of points, just in the same manner as chancres affect different parts of the glans. It might be supposed that dissection would at once clear up this matter, and put an end to the dispute; but this is far from being the case. Dr Simmons has seen several urethras opened in persons who had a gonorrhœa at the time of their death: in three of them the surface of the urethra, as in the cases related by Morgagni, appeared for some way down of a slight red colour, and in all of them was covered with mucus; but without any appearance of ulceration, except in two dissections at Paris, in which most of the gentlemen present were convinced that they saw evident marks of it: but Dr Simmons says that the appearances were to him not sufficiently satisfactory to enable him to decide with certainty on the subject. On the other hand, when we consider that the discharge in a gonorrhœa is sometimes tinged with blood, and that when this happens a little blood-vessel is no doubt ruptured, we can have no reason to doubt that an ulceration may, and sometimes does, happen in these cases; especially as we often observe an excoriation near the orifice of the urethra. It is certain, that wherever there is considerable inflammation, there will be danger of ulceration. Besides, from a neglected or badly-treated gonorrhœa, we often see fistulas *in perineo*, and other ulcers of the urethra, penetrating through its substance, and affording a passage to the urine. And there can be no doubt that slight ulcerations of this canal often occur, and are afterwards perfectly obliterated, in a similar manner to what happens in the papillæ of the tongue, the tonsils, &c. Such an obliteration will the more readily take place in a part like the urethra, defended with mucus, and not exposed to the air, which is known to have no little effect in hardening a cicatrix.

But whether ulcers take place or not, whether the virus of gonorrhœa be precisely of the same kind with that which gives syphilis, or of a different kind, there is reason from the phenomena of the disease to conclude, that the matter first acts by mixing with the mucus at the extremity of the urethra; and that from thence it is propagated upwards, particularly where the excretories of mucus are most numerous; and that on the parts to which it is applied, it operates as a peculiar irritating cause. The consequences of this irritation will be inflammation and an increased secretion of mucus; and so far the complaint will be local. In ninety-nine cases of an hundred a local affection of this kind constitutes the whole of the disease; and of this inflammation, ulcerations within the urethra, strictures, and other local affections, may be the consequence. But whether a disease of the habit ever takes place, unless when the contagion of syphilis is commu-

icated with that of gonorrhœa, still remains to be determined by future observations and experiments.

Nothing can be more variable than the period at which the disease makes its appearance after infection. Perhaps, at a medium, we may place it between the 4th and 14th day: but in some cases it happens within 24 hours; and in others, not before the end of five or even six weeks: neither of these extremes, however, are common.

From what has been said of the manner in which the contagious matter in gonorrhœa acts, and of the influence it exerts on those parts with which it comes in contact, it follows, that the prevention of gonorrhœa must depend on the removal of the contagious matter as soon as that can be done; and where this is either altogether neglected or not properly accomplished, that the cure must depend on counteracting the inflammation which this contagious matter excites, and the consequences which result from it.

The first of these intentions may be most certainly and most easily accomplished by careful lotion of all the parts to which the contagious matter has any chance of being applied. These parts, at least on the first application of the matter, are readily accessible: for even in men there is no reason to believe that it at first penetrates to any extent in the urethra. This washing of the parts should be performed as soon as possible; because then the matter is both most accessible and least involved with mucus: but although washing cannot be accomplished at an early period, it should not be neglected afterwards; for from the disease uniformly commencing, even when it does not appear till a considerable time after the application of the contagious matter, with a peculiar sense of titillation at the external parts, particularly in men at the extremity of the urethra, there is reason to believe that the contagious matter attached to the mucus may remain latent there for a very considerable time. For the purpose of washing, with a view to the prevention of this disease, recourse may be had to almost any watery fluid, provided it be not so stimulant as to produce bad effects from injuring the parts. Pure water, properly applied, is perhaps one of the best lotions; but there can be no doubt that its power in removing the contagious matter may be somewhat increased by such additions as render it a more powerful solvent of mucus. With this intention, one of the most powerful additions is the vegetable alkali, either in its mild or caustic state. In the latter state it is the most active, but in the former it is most safe; and the *lixiva purificata* of the Edinburgh pharmacopœia, to the extent of half a drachm, dissolved in six or eight ounces of water, is one of the best lotions that can be employed. The purpose of removing the contagion may often also be effectually answered from washing with water impregnated with soap; for there the alkali, though in a caustic state, is prevented from exerting any disagreeable effects, in consequence of its being combined with oily matters.

With the view of preventing gonorrhœa, some have advised, that the alkali either in its mild or caustic state, properly diluted with water, should be injected into the urethra: and there can be no doubt, that by this

Apocenes this means the contagious matter, when it has entered the urethra, may be removed. A removal may also be effected by the injection of a weak solution of corrosive sublimate, which seems to act not by dissolving the mucus but by producing an augmented secretion. But at a very early period of the disease, injections are probably unnecessary; and if it has made any considerable progress, they are dangerous: for from the augmented sensibility of the part, even very gentle ones are apt to excite a high degree of inflammation.

There are practitioners who, supposing that the body possesses powers to expel the virus, and that the disease has a certain period to run through its several stages of progress, acme, and decline, are for leaving the cure to nature; or at least content themselves with assisting her by an antiphlogistic regimen, gentle evacuations, and the like.

That in many cases the disorder admits of a natural cure, there can be no doubt; the increased secretion of mucus carrying off the virus faster than it is formed, till at length the infection is wholly removed: But it is equally certain, that in every case, by the application of suitable remedies to the inflamed part, we may shorten the duration of the complaint, and abridge the sufferings of the patient, with the same certainty and safety as we are enabled to remove the effects of an ophthalmia or any other local inflammation, by proper topical applications. General remedies, such as occasional blood-letting, a cooling diet, the liberal use of diluting liquors, and mild purges, are by all allowed to be useful, and even necessary. Astruc was of opinion that in these cases blood-letting ought to be repeated five or six times; and there are still many practitioners who depend much on repeated evacuations of this sort for a removal of the inflammation. But there is, perhaps, not one case in ten in which it is at all requisite; and this small number of cases will consist only of the strong and plethoric: in such, when the chordee is frequent and painful, and the pulse hard and full, the loss of from eight to twelve ounces of blood will be beneficial, but it will be seldom necessary to repeat the operation. The inflammation in these cases is kept up by the local stimulus of the virus and the urine; and all that we can expect from venesection is to moderate the pain and the frequency of erection. In persons of a delicate habit, and of an irritable fibre, the evacuation will do no good; but if repeated will certainly be liable to do harm, by increasing irritability, and of course rendering the patient more susceptible of stimulus.

The utility, and even the necessity, of a cooling regimen, are sufficiently obvious; wine and spirituous liquors, spiceries, a fish-diet, much animal-food, and salted and high-seasoned dishes of every sort, will constantly add to the complaint. The patient should eat meat only once a-day, and that sparingly. He should abstain from hot suppers. Milk, mild vegetables, and fruit, should constitute the principal part of his diet while the inflammatory symptoms continue. Every thing that tends to excite the venereal imagination should be studiously avoided; for whatever promotes erections of the penis will increase the inflammation, and of course add fuel to the disease. For the same reasons much walking or riding on horseback will be hurtful, from the irritation kept up in the perineum

VOL. XI. Part I.

by such means. Violent exercise of any kind, or any thing that is liable to increase the heat and the momentum of the blood, will of course be improper.

The drinking freely of mild, cooling, mucilaginous liquors, such as linseed-tea, orgeat, whey, milk and water, almond emulsion, and the like, will be extremely useful, by diluting the urine, and preventing its salts from stimulating the urethra. When the heat and pain in making water are very considerable, mucilaginous substances are found to have the best effect, particularly the gum tragacanth. It is a common practice to give equal doses of this gum or gum-arabic and nitre, and to dissolve nitre in the patient's drink, with a view to lessen the inflammation. But in these cases nitre is always improper: it is known to be a powerful diuretic, its chief action being upon the urinary passages; so that the stimulus it occasions will only serve to increase the evil it is intended to alleviate. Cream of tartar, on account of its diuretic quality, will be equally improper. Our view here is not to promote a preternatural flow of urine; for the virus, being insoluble in water, cannot easily be washed away by such means; but our object ought to be, to render the urine that is secreted as mild and as little stimulating as possible.

Mild purges, which constitute another material part of the general remedies, are no doubt extremely useful when exhibited with prudence; but it is well known that the abuse of purgative medicines in this disease has been productive of numerous evils. Formerly it was a pretty general practice to give a large dose of calomel at bed-time, three or four times a-week; and to work it off the next morning with a strong dose of the *pilula coccie*, or some other drastic purge. This method was persevered in for several weeks: in consequence of which the patient often found himself troubled with an obstinate gleet, and perhaps his constitution materially injured; the effect of such a method being (especially in irritable habits) to weaken the stomach and bowels, and lay the foundation of hypochondriacal complaints. Violent purging likewise often occasions strangury, hernia humoralis, and other troublesome symptoms.

The purges employed in these cases should be gentle; such as Rochelle salt, manna, tartarised alkali, and the like. They should be given only in a dose sufficient to procure two or three stools, and be repeated only every two or three days. The daily use of the purgative electuaries that are still given by some practitioners, serves only to keep up a continual irritation on the bladder, and of course to prolong the inflammation.

The topical remedies that are used consist chiefly of different sorts of injections, the ingredients of which are extremely various; but their modes of operation may in general be referred to their mucilaginous and sedative, or to their detergent, stimulating, and astringent qualities. In the hands of skilful practitioners, great advantages may doubtless be derived from the use of these remedies; but, on the other hand, the improper and unseasonable administration of them may prove a source of irreparable mischief to the patient.

We know that mucilaginous and oily injections will tend to allay the local inflammation; and that a seda-

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tive

Gonorrhœa

Apocynose tive injection, such as a solution of opium, will lessen the irritability of the parts, and of course produce a similar effect; the utility of such applications is therefore sufficiently obvious.

A detergent injection, or one that will act upon the mucus of the urethra, increase the discharge of it, wash it away, and with it the venereal virus that is blended with it, can only be used as a prophylactic before the symptoms of infection have made their appearance. But great circumspection is necessary in the use of this kind of injection. If it be too weak, it can be of no efficacy; and if it be too strong, it may prove dangerous to the patient. A suppression of urine has been brought on by the improper use of an injection of this kind. When the symptoms of inflammation have once made their appearance, the stimulus of such an injection must be extremely hazardous. Excoriation of the urethra has but too often been produced by remedies of this sort in the hands of adventurous and unskilful practitioners.

While the inflammation of the urethra continues, every thing that stimulates it must be hurtful. If the injection excites a painful sensation in the urethra, as is but too often the case, it will be liable to produce swelled testicles, difficulty in making water, excoriation, and other effects of increased inflammation: if, by its astringency, the running be checked before the virus that excited the discharge be properly subdued, the patient will be exposed to fresh dangers; and perhaps to a variety of local complaints, such as obstructions in the urethra, and abscesses in *perinaeo*, which are well known to be sometimes owing to applications of this sort improperly managed.

When the inflammation has subsided, gently stimulating and astringent injections may be used with safety, and with considerable advantage: for as the inflammation is at first excited by the stimulus of the venereal virus, so when the former begins to lessen, we may be assured that the activity of the latter has abated in proportion; and, in general, when the inflammatory symptoms are entirely removed, it will be found, that the mucus is no longer of an infectious nature, but is merely the effect of an increased secretion and of relaxation. Mild astringents will therefore serve to brace and strengthen the vessels secreting mucus, and in this way will lessen the discharge, and greatly promote the cure. It is certain, that in the greater number of cases, a gonorrhœa, which if treated by internal remedies alone, would continue for five or six weeks, or longer, may, when judiciously treated with injections, be cured in a fortnight, and very often in less time. The great aim, therefore, of the practitioner ought to be at first to make use of such injections only as will tend to lubricate the surface of the urethra, and to counteract and destroy the stimulus of the virus: as the inflammation abates, he may add some gently astringent preparation to a mucilaginous and sedative injection; taking care that its astringency be suited to the state of the disease, and to the irritability of the patient. Amongst a great variety of substances, mercury in different forms is one of those that is the most frequently employed in injections. All these mercurial injections have more or less of astringency; and, according to Dr Simmons, it is solely to this property

that we are to ascribe their effects; for the idea of Gonorrhœa their correcting the venereal virus was originally introduced, and has, he thinks, been continued upon mistaken principles.

Calomel, mixed with the mucus discharged in a gonorrhœa, has no more power in destroying the infectious properties of that mucus than cerusse or any other preparation would have. A diluted solution of sublimate injected into the urethra, will, like a solution of verdigrise, or blue vitriol, or any other styptic, constringe the mouths of the lacunæ; but this is all that it will do, for it will never lessen the infectious nature of the virus. The same thing may be observed of crude mercury extinguished by means of mucilage, or of mercurial unction, blended with the yolk of an egg, and which, when thrown up into the urethra, will act nearly in the same manner as balsam of copaiva, or any other stimulating injection. The stimulus of calomel, however, has often been found of considerable efficacy; and in women, when the vagina only was affected, after washing the parts well, the cure has been accomplished by rubbing them repeatedly with mercurial ointment.

As the gonorrhœa is only a local affection, it may be inferred, that the internal use of mercury is unnecessary towards the cure. Very often indeed this complaint may be removed without having recourse to mercurials. Sometimes patients have been met with whose general health has been greatly impaired by a long continued use of mercury in such cases, while the original disease, the gonorrhœa, was rendered much worse by it. In some it degenerated into a gleet, that was cured with extreme difficulty; in others it brought on a variety of distressing symptoms. In cases of gonorrhœas, therefore, whenever mercury is administered, it ought to be, not with a view to expedite the cure, but merely to obviate the dangers of syphilis. When the infection is apparently slight, and the inflammation and the symptoms trifling, we may proceed without the assistance of mercury, especially if the patient be of a weak, relaxed, and irritable habit, likely to be injured by mercurial medicines. On the other hand, when the discharge is violent, the inflammation considerable, or the seat of the disease high up in the urethra, it is perhaps the most prudent plan to give mercurials in small doses, and in such forms as seem the best adapted to the constitution of the patient.

The *pilula hydrargyri*, as prepared according to the receipts inserted in the last edition either of the London or Edinburgh pharmacopœias, in both of which the mercury is rendered active merely by triture, may perhaps be considered as one of the mildest and most efficacious forms under which mercury can be exhibited by the mouth. Its efficacy will depend on its not irritating the bowels, and so passing off by stool; care must likewise be taken to prevent its affecting the mouth. Of the chemical preparations of mercury, the mildest and least irritating is calomel. It may be given from gr. iß. to gr. iiii. at bed time, occasionally interposing a mild purgative to prevent it from salivating; but in general the mercurial pill just mentioned is to be preferred.

When there is no chancre nor bubo, no appearance in short of syphilitic infection, it would be improper

Apoc-
noses.

to administer corrosive sublimate, the mercurius calcinatus, or any other of the more acrid preparations of mercury.

After a gonorrhœa proceeding from venereal causes has been removed, another kind of running without pain, called the *gonorrhœa mucosa*, or *gleet*, sometimes remains. Sometimes it arises from a constriction and excoriation of the urethra, and frequently it is the effect of an enlargement and diseased state of the prostate. In each of these cases, as the gleet is the effect of irritation, the cure will depend on the removal of the local disease that occasions it. But there is another species of gleet that seems to depend chiefly on relaxation. It is in general free from infection, and is most common in those who have had long and frequent gonorrhœas. It is likewise often the effect of a debilitated habit, from severe purging, or a long continued use of mercurials. A discharge of this kind is more frequent in women than in men; or, at least, the fluor albus, after a gonorrhœa, will often be mistaken for a gleet.

When there is no reason to suspect remaining contagion, astringent injections will be of the greatest service. It will be necessary, at the same time, to attend to the health of the patient, by employing the Peruvian bark, chalybeate waters, cold bathing, and such other remedies as will tend to strengthen the system: and indeed by the use of these, particularly by the Peruvian bark, such runnings are often successfully combated in those who from apprehension of dangerous consequences cannot be prevailed upon to employ injections. When there is no tendency to inflammation, the balsam of copaiva may be prescribed with advantage in large doses. Dr Simmons says he once saw a complaint of this sort removed by applying a blister to the perineum, after it had resisted a variety of other remedies. In the Medical Observations also we have an account of a gleet and incontinence of urine removed at once by a blister to the os sacrum. In general, however, the other methods above mentioned will be sufficient to remove it, though sometimes it will continue for a long time in spite of all our endeavours to check it.—Other kinds of gonorrhœa, in which the semen itself is ejected, especially during sleep, may be cured by tonics and a mild cooling regimen.

ORDER V. EPISCHESES.

GENUS CXXII. OBSTIPATIO.

COSTIVENESS.

Obstipatio, *Lin.* 166. *Vog.* 128. *Sag.* 221.

Costiveness is sometimes occasioned by debility in dyspeptic persons, sometimes it is the effect of rigidity, and sometimes it is symptomatic of the colic. It may proceed from an excessive heat of the liver; drinking rough red wines, or other astringent liquors; too much exercise, especially on horseback: it may likewise proceed from a long use of cold insipid food, which does not sufficiently stimulate the intestines. Sometimes it is owing to the bile not descending to the intestines, as in the jaundice; and at other times it proceeds from diseases of the intestines themselves,

as a palsy, spasms, tumors, a cold dry state of the intestines, &c.

Obstipatio

Excessive costiveness is apt to occasion pains of the head, vomiting, colics, and other complaints of the bowels. It is peculiarly hurtful to hypochondriac and hysteric persons, as it generates wind and other distressing symptoms.

Persons who are generally costive should live upon a moistening and laxative diet; as roasted or boiled apples, pears, stewed prunes, raisins, gruels with currants, butter, honey, sugar, and such like. Broths with spinage, leeks, and other soft pot-herbs, are likewise proper. Rye-bread, or that which is made of a mixture of wheat and rye together, ought to be eat. No person troubled with costiveness should eat white bread alone, especially that which is made of fine flour. The best bread for keeping the belly soluble is what in some parts of England they call *meslin*. It is made of a mixture of wheat and rye, and is very agreeable to those who are accustomed to it.

Costiveness is increased by keeping the body too warm, and by every thing that promotes the perspiration; as wearing flannel, lying too long a-bed, &c. Intense thought, and a sedentary life, are likewise hurtful. All the secretions and excretions are promoted by moderate exercise without doors, and by a gay, cheerful, sprightly temper of mind.

The drink should be of an opening quality. All ardent spirits, austere and astringent wines, as port, claret, &c. ought to be avoided. Malt liquor that is fine and of a moderate strength is very proper. Butter-milk, whey, and other watery liquors, are likewise proper, and may be drank in turns, as the patient's inclination directs.

Those who are troubled with costiveness ought, if possible, to remedy it by diet, as the constant use of medicines for that purpose is attended with many inconveniences, and often with bad consequences. In time the custom becomes necessary, and generally ends in a total relaxation of the bowels, indigestion, loss of appetite, wasting of the strength, and death.

The learned Dr Arbuthnot advises those who are troubled with costiveness to use animal-oils, as fresh-butter, cream, marrow, fat broths, &c. He likewise recommends the expressed oils of mild vegetables, as olives, almonds, pistaches, and the fruits themselves; all oily and mild fruits, as figs; decoctions of mealy vegetables; these lubricate the intestines; some saponeous substances which stimulate gently, as honey, hydromel, or boiled honey and water, unrefined sugar, &c.

The doctor observes, that such lenitive substances are proper for persons of dry atrabilarian constitutions, who are subject to astriction of the belly and the piles, and will operate when stronger medicinal substances are sometimes ineffectual; but that such lenitive diet hurts those whose bowels are weak and lax. He likewise observes, that all watery substances are lenitive; and that even common water, whey, sour milk, and butter-milk, have that effect:—That new milk, especially asses milk, stimulates still more when it sours on the stomach; and that whey, turned sour, will purge strongly:—That most part of fruits are likewise laxative; and that some of them, as grapes, will throw

Epischemes such as take them immoderately, into a cholera morbus, or incurable diarrhoea.

When the body cannot be kept open without medicine, gentle doses of rhubarb may be taken twice or thrice a-week. This is not near so injurious to the stomach as aloes, jalap, or the other drastic purgatives so much in use. Infusions of senna and manna may likewise be taken, or half an ounce of tartarised alkali dissolved in water-gruel. About the size of a nutmeg of lenitive electuary taken twice or thrice a-day, generally answers the purpose very well.

394

GENUS CXXIII. ISCHURIA.

SUPPRESSION of Urine.

Ischuria; *Sauv.* gen. 293. *Lin.* 167. *Vog.* 129. *Sag.* 212. *Home's Clinical Experiments*, sect. xv.

This distemper is distinguished into various species, according as the seat of it is in the kidneys, the ureters, the bladder, or the urethra; and hence these species are named *renalis*, *ureterica*, *vesicalis*, and *urethralis*.

395

1. *Ischuria renalis*, or a suppression of urine from an affection of the kidneys, happens but rarely; however, Dr Home in his Clinical experiments describes such a case. In the end of December 1774, a man of a full habit, aged 35, was seized with shivering, coldness, and severe cough. Three days after, his urine appeared high-coloured, was passed with pain, and in small quantity. About the 8th of January 1775, he was attacked with violent pains in the small of his back, over the whole abdomen, and in the ankles, with pain in the region of the liver when pressed. A general swelling was afterwards observed all over the body, but mostly in the ankles and abdomen, which last was tense and hard. These were attended with vomiting, bad appetite, and considerable thirst. When he entered the clinical ward (January 21st), the cough, sickness, and vomiting, had gone off, but the suppression of urine remained. The little which he made was passed with his stools, so that Dr Home saw it but once; and then it was pale, and had a white powder at bottom. The pains and swellings, which retained the impression of the finger, continued; he had a head-ach, and a very slow pulse, beating only 48 strokes in a minute. He had taken a great many diuretic medicines before he came in. The day after his reception, he was seized with a spontaneous diarrhoea, which continued during the remainder of his life. Crystals of tartar were exhibited in doses of half an ounce each morning; at bed-time he took 20 drops of tincture of opium with a scruple of nitre, and continued this course for eight days without any increase of urine. The stronger and heating diuretics were then tried, as an infusion of juniper berries and pills of garlic; but they were attended with no sensible advantage. Whenever the pulse became so strong that he could bear bleeding, eight ounces of blood were taken away, which was fizy. This was thrice repeated; he appeared easier after each bleeding, his pulse bore it well, and the swellings and other symptoms abated. The heating diuretics, in this state, were given up; and a mixture of vinegar and nitre was substituted in their place, in each dose of which, taken every two hours, there was a scruple of nitre. Fo-

mentations were applied to the region of the kidneys, and camphorated oil was afterwards rubbed on the part. He was ordered the semicupium, which from a deficiency of water in the hospital at that time he got only once; and which then seemed to have a good effect, as he passed a gill of urine when he was in it. Notwithstanding this, however, the disease continually gained ground; he became comatose, delirious, and died ten days after his admission.—On dissection, the kidneys were found of an irregular form; some watery vesicles appeared on their surface, containing black gritty particles like fine sand; and the lower part of the right kidney was considerably inflamed. The pylorus, part of the duodenum, and a considerable part of the small intestines, were much inflamed. In the abdomen were found about five pounds of fluid, and in the cavities of the thorax about half a pound. The lungs were a little inflamed, and full of small tubercles on their surface and in their substance: the heart was large, and a polypus in each ventricle. About six ounces of fluid were found in the pericardium: in the brain nothing preternatural appeared, except about an ounce of water in each ventricle.

Dr Home seems to have been at a loss for the remote cause of this suppression of urine, which manifestly had its immediate origin from the kidneys having lost the power of performing their functions. He thinks the inflammation which appeared in the right kidney was scarce sufficient to have occasioned the distemper, as the other would have supplied its place; for which reason also he thinks that the ischuria was owing to a general affection of the system; and that it was of an arthritic nature, the patient having been troubled with complaints of that kind for a long time before.

2. The *ischuria ureterica* is also a rare disease, unless the obstruction proceeds from a stone or clot of blood stopping up the passage. Gravel or stones, indeed, are very frequently formed in the kidneys; and, by falling into the ureters, occasion an ischuria, with violent pain, and symptoms more or less urgent in proportion to the size and shape of the stones. Sometimes it is attended with coldness of the extremities, nausea, vomiting, and spastic constriction of the præcordia, a difficulty of making water, constipation of the belly, difficulty of breathing, stupor of the thigh, retraction of the testicle to the *os pubis*, inquietude, loss of strength, syncope, and convulsion fits. When the violent pain has continued for several days and nights without intermission, and has brought the patient exceeding low, and the suppression of urine is complete, with coldness of the extremities and convulsions of the tendons, death is at hand. Nor is it a good sign when the stone continues long in the ureter; for then the appetite decays, a nausea and retching to vomit supervene, and the patient is consumed with a hectic heat. Sometimes the pain is attended with an inflammation of the stomach and intestines; and sometimes the disease ends in a dropsy of the breast, or lethargy, which soon carry off the patient.

The indications of cure are, to exclude the stone as easily as possible, and prevent the breeding of others. If the patient be of a sanguineous temperament, Sydenham recommends to take away ten ounces of blood from

396

Epischemes from the affected side; and then to give the patient a gallon of posset-drink in which two ounces of marsh-mallow roots have been boiled, injecting at the same time an emollient glyster. After the posset-drink has been vomited up, and the clyster returned, give a pretty large dose of an opiate. But if the patient be old or weak, or subject to nervous affections, bleeding may be omitted, especially if his urine at the beginning of the fit be coffee-coloured, and mixed with gravel; but as to other things, the cure is the same.—Huxham greatly recommends an emollient bath prepared of a decoction of marsh-mallow root, linseed, fœnugreek seed, and flowers of chamomile, to which may be added a few white-poppy seeds. By the use of this bath he says he has seen the most cruel fit of the gravel suddenly ended, when neither copious bleeding nor opiates had the least effect. Mild diuretics are also of service. Hoffman recommends dulcified spirit of nitre as proper to relax the spastic stricture. It is to be taken with suitable distilled waters and syrup of poppies; or in broth, with a few spoonfuls of oil of sweet almonds. Turpentine glysters are also accounted very serviceable; and may be prepared of ten ounces decoction of chamomile, with half an ounce of turpentine dissolved in the yolk of an egg, and about as much honey. The *sal diureticus*, or acetated alkali, is much esteemed by some, when taken along with an opiate. But when the stone is too big to pass, Arbuthnot recommends a cool and diluent diet to hinder the further growth of it. Whey, infusion of linseed, decoction of marshmallows, and gently resolving diuretics, are also proper. To put a stop to the vomiting, *balsamum traumaticum* may be used with success when almost every other means have failed.

397

3. The *ischuria vesicalis* may arise from a stone in the bladder; and this indeed is the most common cause of it: but there are certain cases in which, though the usual quantity of urine, or perhaps more, be passed, the patient dies from the retention of a still greater quantity in the bladder. Of this Dr Home gives the following instances. A man of 58 years of age, of a strong spare habit, and never subject to the gravel, had, during the winter of 1777, a cough with expectoration, which went off in the beginning 1778. About the 17th of February 1778 he felt some difficulty in passing his urine, and much pain about the region of the bladder. He continued in this way for ten days, after which he became easier on application of some medicines. The abdomen then swelled, and he had pains in his loins and thighs. On the 3d of March he was admitted into the clinical ward: his abdomen was then swelled and tense; and an evident fluctuation was felt, which some that touched him thought was sonorous and produced by wind. A tumor was discovered betwixt the navel and spine of the os ilium on the left side, which gave him much pain, especially when pressed. This tumor became more easily felt after the swelling of the abdomen decreased, seemed round, and very near as large as the head of a child. It appeared very much on the left side, even when the patient lay on the right, and the tumor then became dependent. He passed urine frequently, and rather more than in health, as it was computed at four pints a-day. It was always clear,

and of a light colour. His body had a strong disagreeable smell; his skin was dry, belly bound, and his appetite entirely gone, so that he had hardly taken any food for 12 days. His legs swelled slightly for some days in the evening. His pulse was generally regular, sometimes slower than natural, and sometimes a little quicker; being once felt at 64, and another time at 92. He was often seized, especially after eating or drinking, with hiccough; which increased and lasted till his death. On the 20th day of his disease, after some doses of squills, the general swelling of his abdomen fell, became much softer, and more distinctly discovered the swelling of the left side. The next day a vomiting came on; he became delirious, and died the day following. The body being opened, it appeared that the tumor which was so distinctly felt on the left side of the abdomen, was owing to a distension of the bladder with urine. Its fundus reached to about the division of the aorta into the iliacs; it entirely filled the pelvis, and contained between five and six pounds of urine of a pale colour. On examining the external surface, its neck, and the beginning of the urethra, were found to be surrounded with a scirrhoty, which impeded the evacuation of the urine. The bladder itself was much thickened, but not more in one part than another. The ureters entered naturally; but were much thickened in their upper half near the kidney. The kidneys were somewhat enlarged; particularly the left, which had several watery vesicles on its external surface. These organs were not in their usual situation; but lay close on each side of the spine, and very near the aorta; so that the renal vessels were very short. What was very singular, the lower end of each rose over the spine, and they were united together by their membranes and substances, the aorta passing beneath the union. The bladder had pressed considerably on this part; and the peritoneum covering them was considerably thicker than natural. The lungs adhered every where to the pleura, and in some places very firmly; they were of a loose texture and black colour; and the veins of the lower extremities were turgid with blood. It does not appear that this patient got any medicines farther than a few dried squills, which diminished the swellings and brought off much wind. He also got a mixture of musk, and afterwards of opium, for his hiccough; but without success. His disease was mistaken for an ascites; and the catheter was not tried; but in another case the use of this instrument was apparently of more service than any internal medicines. This last patient was about 90 years of age, and laboured under symptoms very similar to those already mentioned. When admitted into the clinical ward, he had the hypogastric region swelled, and difficulty of passing his water; but without pain, vomiting, or hiccough. He had lost all appetite; was thirsty, and costive. His pulse was 110, and weak. In the evening about three English pints of pale clear urine were drawn off by means of the catheter: the next day all the symptoms were gone off or abated. After this he continued to pass some urine, sometimes voluntarily, sometimes involuntarily and insensibly; but so much always remained behind, that his bladder was constantly full, unless when the urine was drawn off.

Epischetes off, which was done twice every day. The urine was sometimes pale, sometimes of a deep red colour; and once there was some blood mixed with it, which perhaps might have been occasioned by the catheter. About the sixth day the urine was very putrid, with much purulent-like matter at the bottom, and was passed with more pain. About the 11th, the putrid smell went off. The next day all the urine passed insensibly except what was drawn off; and an hiccough, though not very severe, had come on. In this way he continued without fever, though frequently troubled with the hiccough, especially during those nights in which the urine had not been drawn off. A month after admittance, the bladder, with the assistance of the catheter, was almost entirely, though insensibly evacuated, and the hiccough had left him; he had no other complaint but that of voiding his urine insensibly, the natural effect of a scirrhus bladder, and which was probably incurable. With this patient the hot bath and mercurials were tried, in order to soften the scirrhusity of the bladder, but without effect.

398 4. The *ischuria urethralis* arises from some tumour stopping up the passage of the urethra, and thus hindering the flow of urine. It is an uncommon distemper, and generally follows a gonorrhœa. Dr Home gives us an example of this also.—The patient was a man of 60 years of age, who had laboured under a gonorrhœa six months before, and which was stopped by some medicines in two or three days. He felt, soon afterwards, a difficulty in passing his urine, which gradually increased. About 10 days before his admission into the clinical ward, it was attended with pains in the glans, and *ardor urinae*; he had passed only about eight ounces the day before his admission, and that with very great difficulty; and the hypogastric region was swelled and pained. On introducing the catheter, three pounds of urine were drawn off, by which the pain and swelling were removed. The instrument required force to make it pass the neck of the bladder, and blood followed the operation; and the finger, introduced into the anus, felt a hard tumour about its neck. He was treated with mercurial pills and ointment, by which the swelling about the neck of the bladder soon began to decrease; but at the same time a swelling of the right testicle appeared. He was vomited with four grains of turbith-mineral, which operated gently; and here Dr Home observes, that though these vomits are little used, from a mistaken notion of their severity, he never saw them operate with more violence than other vomits, or than he could have wished. The swelling diminished in consequence of the vomit and some external applications; and the cure was completed by bleeding and a decoction of mezereon-root.

399

GENUS CXXIV. DYSURIA.

DIFFICULTY OF DISCHARGING URINE.

Dysuria, *Sauv. gen.* 265. *Lin.* 57. *Vog.* 164
Sag. 213.
Stranguria auctorum.

A difficulty of making water may arise from many different causes; as from some acrid matter in the blood, cantharides, for instance: and hence a stran-

gury very often succeeds the application of blisters. In many cases it arises from a compression of some of the neighbouring parts; of the uterus, for instance, in a state of pregnancy. Or it may arise from a spasmodic affection of the bladder, or rather its sphincter; or from an inflammation of these parts, or others near them. Hence the disease is distinguished into so many species, the cure of which depends upon the remedies indicated by their different causes.

But the most common, as well as the most dangerous species is that arising from a calculous concretion, or

STONE IN THE BLADDER.

Dysuria calculosa, *Sauv. sp.* 12.

403

The signs of a stone in the bladder are, pain, especially about the sphincter; and bloody urine, in consequence of riding or being jolted in a carriage; a sense of weight in the *perinaeum*; an itchiness of the *glans penis*; slimy sediment in the urine; and frequent stoppages in making water; a *tenesmus* also comes on while the urine is discharged: but the most certain sign is, when the stone is felt by the finger introduced into the anus, or by the catheter.

Causes, &c. It is not easy to say what the particular causes are that occasion the apparently earthy particles of the fluids to run together, and form those calculous concretions which are found in different parts of the body, and especially in the organs for straining off and discharging the urine.

The gout and stone are generally supposed to have some affinity, because gouty people are for the most part afflicted with the gravel. But perhaps this is in part owing to their long confinement, and to the lying on the back, which people who labour under the gout are often obliged to submit to; since the want of exercise, and this posture, will naturally favour the stagnation of gross matters in the kidneys: besides, there are many instances of people severely afflicted with the stone for the greatest part of a long life, who have never had the least attack of the gout.

There is, however, good reason for believing, that some farther connection takes place between the two diseases; and when treating of the gout we have already given some account of the opinion of an ingenious anonymous author, who has endeavoured to prove, that both the one and the other depend on a peculiar acid, the concreting or lithic acid, which is always present in blood; and which may be precipitated from thence by various causes, such as the introduction of other acids, or the like. When thus precipitated, he supposes it to produce the whole phenomena of both diseases. The objections we formerly stated to his theory of gout, do not equally militate against that of calculus; and it is at least certain, from the best chemical analysis, that what are commonly called *urinary calculi*, and have been considered as entirely an earthy matter, consist principally of acid in a solid state united only with a small proportion of earth or mucus. We may, therefore, whether this hypothesis be altogether well founded or not, justly view lithiasis as depending on the separation of an acid from the blood.

Whatever may be the particular cause of the disposition

Epistemes

Dysuria.

position to *lithiasis*, the kidneys appear to be the most likely places for particles to concrete or run together, because of the great quantity of blood which passes through the renal arteries, and which comes immediately from the heart, fraught with various newly-received matters, that have not undergone much of the action of the vessels, and therefore cannot as yet be supposed to be thoroughly assimilated.

Anatomists who have carefully examined the kidneys in the human subject, particularly M. Bertin, inform us, that there are two sets of *tubuli uriniferi*; the one continued directly from the extremities of the renal artery, and the other springing from that vesicular texture which is conspicuous in the kidneys.

It is in this vesicular part of the kidney that we presume the particles of the concreting matter first stagnate and coalesce: for it is hardly to be supposed, that such solid matters could be allowed to stop in the extremities of the renal arteries, since the blood, and the urine separated from it, must flow through these vessels with great degrees of force and velocity; but in the intermediate vesiculæ the particles may lie, and there attracting each other, soon come to acquire sensible degrees of magnitude, and thus become sand or gravel. As long as this sand or gravel formed in the vesicular part of the kidney lies quiet, there will be no pain or uneasiness, until the concretions become large enough to press either on the adjoining *tubuli*, or on the blood-vessels; then a sense of weight, and a kind of obtuse pain in the loins, will be felt. But when the small pieces of concreting matter shall be dislodged and washed off by the force of the circulating fluids, or loosened by some spasmodic action of the moving fibres in these parts, they will in their passage create pain, raise different degrees of inflammation, or perhaps lacerate some blood-vessels, and cause bloody urine. When these little concretions happen to be detained in the pelvis of the kidney, or any other place where a flow of urine continually passes, they soon increase in size, and become calculi, from the constant accession of particles, which are attracted by the original bit of sand, which thus becomes the nucleus of a stone.

It is an opinion which Hippocrates first advanced, and which has been almost universally adopted by his followers, and has remained till lately uncontroverted, that the stone and gravel are generated by the use of hard water. And from this quality, which the waters of certain springs possess, of depositing a large earthy sediment, either in the aqueducts thro' which they are conveyed, or in the vessels in which they are boiled or preserved, it was conjectured, that in passing through the kidneys, and especially whilst retained in the bladder, they would let fall their grosser particles, which by the continued apposition of fresh matter, connected by the animal gluten, and compacted by the muscular action of that organ, would in time form a calculus sufficiently large to produce a train of the most excruciating symptoms. And this reasoning *à priori* has been supposed to be confirmed by facts and experience; for not to mention the authority of Hippocrates, Dr Lister has observed, that the inhabitants of Paris are peculiarly subject to the stone in the bladder. Nicholas de Blegny has related

the history of one who was dissected at Paris, in whom the pylorus, a great part of the duodenum, and the stomach itself, were found incrustated with a stony matter, to the thickness of a finger's breadth. And it is well known, that the water of the river Seine, with which that city is supplied, is so impregnated with calcareous matter, as to incrustate, and in a short time to choke up, the pipes through which it runs. But on the other hand it is objected, that the human calculus is of animal origin, and by chemical analysis appears to bear very little analogy to the stony concretions of water: and though it be allowed, that more persons are cut for the stone in the hospitals at Paris than in most other places; yet upon inquiry it is found, that many of those patients come from different provinces, and from towns and villages far distant from the Seine.

Dr Percival conjectures, that though this disease may chiefly depend upon a peculiar disposition to concrete in the animal fluids, which in many instances is hereditary, and in no instance can with certainty be imputed to any particular cause; yet hard water is at least negatively favourable to this diathesis, by having no tendency to diminish it. The urine of the most healthy person is generally loaded with an apparently terreous matter, capable in favourable circumstances of forming a calculus; as is evident from the thick crust which it deposits on the sides of the vessels in which it is contained. And it seems as if nature intended by this excretion to discharge all the superfluous salts of the blood, together with those earthy particles, which are either derived from our aliment, and fine enough to pass thro' the lacteals, though insuperable by the powers of circulation, or which arise from the abrasion of the solids, or from the dissolution of the red globular part of our fluids. Now water, whether used as nature presents us with it, or mixed with wine, or taken under the form of beer or ale, is the great diluter, vehicle, and menstruum, both of our food, and of the saline, earthy, and excrementitious parts of the animal juices. And it is more or less adapted to the performance of these offices, in proportion to its degree of purity. For it must appear evident to the most ordinary understanding, that a menstruum already loaded, and perhaps saturated with different contents, cannot act so powerfully as one which is free from all sensible impregnation. Nor is this reasoning founded upon theory alone; for it is observed, that Malvern water, which issues from a spring in Worcestershire remarkable for its uncommon purity, has the property of dissolving the little fabulous stones which are often voided in nephritic complaints. And the solution too, which is a proof of its being complete, is perfectly colourless. Hence this water is drunk with great advantage in disorders of the urinary passages. And during the use of it, the patient's urine is generally limpid, and seldom deposits any sandy sediment. Yet notwithstanding this appearance of transparency, it is certainly at such times loaded with impurities, which are so diluted and dissolved as not to be visible. For it is attended with a strong and fetid smell, exactly resembling that of asparagus. Hoffman mentions a pure, light, simple water in the principality of Henneberg, in Germany, which is remarkable for its efficacy in the stone and gravel; and a water of similar virtues was discovered not many years

Epischefes

ago in the black forest, near Osterod, which upon examination did not afford a single grain of mineral matter. Indeed it is worthy of observation, that most of the springs which were formerly held in great esteem, and were called *holy wells*, are very pure, and yield little or no sediment.

Dr Percival informs us that a gentleman of Manchester, who had been long subject to nephritic complaints, and often voided small stones, was advised to refrain from his own pump-water, which is uncommonly hard, and to drink constantly the soft water of a neighbouring spring; and that this change alone, without the use of any medicine, has rendered the returns of his disorder much less frequent and painful. A lady also, much affected with the gravel, was induced by the perusal of the first edition of Dr Percival's Essay, to try the effect of soft water; and by the constant use of it remained two years entirely free from her disorder.

In nephritic cases, distilled water would be an excellent substitute for Malvern water, as the following experiment evinces.

Two fragments of the same calculus, nearly of equal weight, were immersed, the one in three ounces of distilled water, the other in three ounces of hard pump-water. The phials were hung up close together in a kitchen-chimney, at a convenient distance from the fire. After 14 days maceration, the calculi were taken out, and carefully dried by a very gentle heat. The former, *viz.* that which had been immersed in distilled water, was diminished in its weight a grain and a half; the latter had lost only half a grain.

It is the passage of these calculi from the kidneys down into the bladder, which occasions the pain, vomiting, and other symptoms, that constitute what is usually termed a *fit of the gravel* or *stone*.

When an inflammation is actually raised, the disease is known by the name of *nephritis*, and has been already treated of.

As soon as the stone passes through the ureter, and falls into the bladder, the pain and other nephritic symptoms cease; and every thing will remain quiet, either till the stone be carried into the urethra, or until it has remained long enough in the bladder to acquire weight sufficient to create new distress.

If a stone happens to be smooth and of a roundish form, it may lie in the bladder and acquire considerable bulk before it can be perceived by the patient; but when it is angular, or has a rugged surface, even though it may be small in size, yet it seldom fails to raise pain, and occasion bloody urine, or the discharge of a slimy fluid, with tenesmus, and difficulty in making water.

There have been various attempts made to dissolve the stone; and there are certainly some articles which have this effect when applied to them out of the body; but the almost total impossibility of getting these conveyed to the kidneys, renders it extremely doubtful whether a solvent ever will be discovered. Of all the articles employed for this purpose, no one perhaps has had greater reputation than fixed alkaline salt in its caustic state, particularly under the form of the *aqua lixivi caustica*: but this being of a very acrid nature, it requires to be well sheathed by means of some gelatinous or mucilaginous vehicle. Veal-broth is as

N^o 209.

convenient as any for this purpose; and accordingly it is used by those who make a secret of the caustic alkali as a solvent of calculus.

Mr Blackrie, who has taken much pains in this inquiry, has proved very satisfactorily, that Chittick's nostrum is no other than soap-lees given in veal-broth, which the patients send every day to the doctor, who returns it mixed up with the medicine, in a close vessel secured by a lock.

It is not every case, however, that either requires or will bear a course of the caustic alkali. Some calculi are of that soft and friable nature, that they will dissolve even in common water; and there are cases wherein it appears that the constant use of some very simple decoction or infusion of an insignificant vegetable, has brought away large quantities of earthy matter, in flakes which apparently have been united together in layers to form a stone. Dr Macbride assures us, that a decoction of raw coffee, only 30 berries in a quart of water, boiled till it acquired a deep greenish colour, taken morning and evening to the quantity of eight or ten ounces, with ten drops of sweet spirit of nitre, had the powerful effect of bringing away, in the course of about two months, as much earthy matter in flakes as filled a large tea-cup. The patient was far advanced in years; and, before he began this decoction, had been reduced to great extremities by the continuance of pain and other distressing symptoms: he was purged occasionally with *oleum ricini*.

Very lately the alkali in a mild state, and in a different form, has been much used by many calculous patients and with great advantage, under the form of what is called *alkaline aerated water*. For the introduction of this medicine, or at least for its extensive use, we are chiefly indebted to that ingenious physician Dr William Falconer of Bath. He has lately published an account of the *Aqua Mephitica Alkalina*, or Solution of fixed alkaline salt, saturated with fixable air, in calculous disorders; which contains a number of cases strongly supporting the benefit to be derived from it. But whether the good effects obtained in these instances are to be explained from its operating as a solvent of calculus, seems to be extremely doubtful. There are indeed cases in Dr Falconer's treatise, of patients in whom, after using it for a considerable time, no stone could be detected by sounding, although it had been discovered in that way before they began the employment of it. But in many instances, the relief has been so sudden, that it may be concluded, that, notwithstanding the ease obtained, the calculus still remained. In such cases, it probably removed from the urine that quality by which it gives to the calculus fresh accretions, producing that roughness of its surface by which it is chiefly capable of acting as a stimulus. For the distressing symptoms resulting from stone, are more immediately to be attributed to the inflammatory and spasmodic affections which it induces; and when its surface is least capable of operating as a stimulus, these of course will be least considerable. It is therefore not improbable, that this remedy produces relief, by preventing fresh additions being made to the calculus.

An infusion of the seeds of *daucus sylvestris* sweetened with honey, is another simple and much celebrated remedy;

Dysuria.

Epischemes remedy; it has been found to give considerable ease in cases where the stomach could not bear any thing of an acrid nature: the leaves of the *uva ursi* were strongly recommended by the late very celebrated De Haen; and, whatever its way of operating may be, seems to have been productive of good effects in some instances. There is no reason to believe that it has any influence in dissolving calculus; and indeed it seems to be chiefly useful in these instances where ulcerations take place in the urinary passages.

In the Edinburgh Medical Commentaries, vol. 3. we have an account of a method used by the inhabitants of Arabia Petræa for curing the stone, to which they are very much subject, and which the author (an English gentleman of experience and candour) affirms he has seen frequently performed with never-failing success. By means of a catheter they inject into the bladder a weak ley of alkali with the purified fat of a sheep's tail, and a proper quantity of opium all put together. Their catheters are made of gold; and in performing the operation they introduce them quite into the bladder; so that the composition is safely conveyed to the stone without hurting any other part. But when a stone is situated in the kidney, they have no method of cure.

If this method of curing by injection could be safely practised, it would no doubt greatly have the advantage over that of taking alkalies by the mouth, where the medicine is not only much weakened, but the constitution of the patient runs the risk of being greatly injured. But from some experiments mentioned in the second volume of the Medical Transactions, it appears that the human calculi are very different from one another in their natures. Some, for instance, will easily yield to an alkaline menstruum, and very little to an acid; while others are found to resist the alkali, and yield to the acid; and some are of such a compact nature, that they yield neither to acids nor alkalies. An attention, however, to the fragments, scales, or films, which the stone may cast off, and also to the contents and sediment of the urine, may lead to the discovery of what solvent is proper, or whether the stone can be dissolved by any. To use either alkalies or acids improperly may be hurtful; though there may be such kinds of calculi as demand the alternate use of acids and alkalies; nay, there may be found calculi of opposite kinds in the same subject.

In such cases as will not allow us to think of dissolving the stony concretions, and where the only scheme is to palliate and procure ease from time to time, little more can be done than to keep the bowels open occasionally by some gentle cathartic, and wash off as much of the loose gravelly matter and slime as can be removed by such mild diuretic infusions and decoctions as shall be found to pass freely and sit well on the stomach. Persons afflicted with the stone should be careful in respect of their diet, and studiously avoid all heavy and flatulent food, as well as high sauces that are apt to turn rancid. For the same reason, butter and acids are to be shunned; for these often create heart-burning, and every thing that offends the stomach raises the nephritic pain; such is the sympathy that obtains between the digestive and the urepoietic organs.

VOL. XI. Part I.

Dysuria.

There have been surgeons bold enough to entertain an idea of cutting even into the kidney, in order to extract a stone: this, however, except in cases where an abscess has been formed, and nature points out the way, is merely chimerical. But cutting into the bladder for the same purpose, is an ancient and well-known operation, and often crowned with success. A description, however, of this operation belongs to the article SURGERY, to which we refer; and here shall only make this remark, that a surgeon should never begin his operation, until he and his assistants are perfectly satisfied, from actually feeling the stone, that there is one in the bladder; because it has sometimes happened, that when the incision has been made, no stone could be found: and the patient having died in consequence of the operation, and the body being opened, it has appeared that the symptoms which occasioned the belief of a stone in the bladder arose from some other cause.

WHEN a dysuria proceeds from any acrimonious matter thrown into the blood, it may be readily cured by bleeding, emollient clysters, cooling and diluting drinks with gum arabic or gum tragacanth, linseed tea, or the warm bath. When it arises from inflammations of the bladder or parts adjoining to it, we are to regard it only as a symptomatic affection; and the remedies used to remove the primary disease will also remove the dysuria. Sometimes it may arise from an ulcer of the bladder; in which case it is generally incurable; a mild nutritious diet will, however, protract the patient's life.

GENUS CXXV. DYSPERMATISMUS.

Difficult EMISSION of SEMEN.

401

Dyspermatismus, *Sauv. gen.* 260.

Sterilitas, *Lin.* 171. *Sag.* 211.

Agnesia, *Vog.* 283.

This impediment proceeds generally from obstructions in the urethra, either by tumors in itself, or in the cavernous bodies of the penis; in which case the treatment is the same as in the ischuria urethralis; sometimes it is owing to a kind of epileptic fit which seizes the man in the venereal act; and sometimes the semen, when ejected from the proper receptacles, is again absorbed by them, or flows into the bladder, and is expelled along with the urine. The last case is very difficult, or indeed impossible to cure; as proceeding from scirrhi, or other indissoluble tumors of the verumontanum, or the neighbouring parts. In some it proceeds merely from too violent an erection; in which case emollient and relaxing medicines will be of service; and we have an example of a cure performed by means of these in the first volume of the Edinburgh Medical Essays.

GENUS CXXVI. AMENHORRHOEA.

SUPPRESSION of the MENSES.

402

Amenorrhœa, *Vog.* 130.

Dysmenorrhœa, *Lin.* 168. *Sag.* 218.

This, with some other symptoms, as dyspepsia, yellowish or greenish colour of the skin, unusual appetites, &c. constitutes the *chlorosis* already treated of, and which seldom or never appears without a suppression of the menses. In Dr Hume's Clinical Experi-

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ments

Epischemes

ments we find the virtues of several emmenagogues set forth in the following manner. Chalybeates seldom or never succeeded: they were always found more useful in diminishing the evacuation when too violent, than in restoring it when deficient. The tincture of black hellebore proved successful only in one of nine or ten cases, though given to the length of four tea-spoonfuls a-day, which is double the quantity recommended by Dr Mead. Compression of the crural artery, recommended by Dr Hamilton in the *Physical and Literary Essays*, Vol II. proved successful only in one of six cases. From the effects produced by this compression, it has the strongest appearance of loading the uterus with blood; from the sensations of the patient it produces the same effects as the approach of the menses, and has every appearance in its favour; yet does not succeed. Dr Hume supposes that the uterus is more frequently in too plethoric and inflammatory a state; in which case, this remedy will do more hurt than in a state of inanition; however, he owns, that in the case in which it did succeed, the patient was plethoric and inflammatory. Venesection is recommended as an excellent remedy; the Doctor gives three instances of its success, and says he could give many more. It acts by removing the plethoric state of the uterus, relaxing the fibres, and giving the vessels full play; so that their action overcomes all resistance, and the evacuation takes place. It is of no great moment from whence the blood is taken: the saphænic vein will perhaps empty the uterus most; but it is difficult to get the proper quantity from it,

and the quantity of the discharge cannot be so well measured. The powder of savine is a most powerful remedy; and proved successful in three cases out of four in which it was tried. It was given to the quantity of half a drachm twice a-day. It is a strong topical stimulus, and seems improper in plethoric habits. Madder-root, according to Dr Hume, is a very powerful medicine in this disease; and proved successful in 14 out of 19 cases in which it was tried, being sometimes exhibited in the quantity of two scruples, or a drachm, four times a-day. It has scarce any sensible effects; never quickens the pulse, or excites inflammatory symptoms: on the contrary, the heat, thirst, and other complaints abate; and sometimes these symptoms are removed, though the disease be not cured; but when it succeeds, the menses appear from the third to the 12th day.—For other methods of curing the amenorrhœa, see CHLOROSIS.

Amenor-
rhea

We have now considered all those diseases enumerated in Dr Cullen's *Nosology*, whose cure is to be attempted chiefly by internal medicines. The other genera either require particular manual operations, or a very considerable use of external applications; and therefore properly fall under the article SURGERY. To this, therefore, we shall refer the genera which fall under the three last orders of this class of locales, viz. the *tumores*, *ectopie*, and *dialyses*; and we shall add, by way of Appendix, a few observations on some important affections to which Dr Cullen has not given a place in his system.

A P P E N D I X.

ANGINA PECTORIS.

403

DR HEBERDEN was the first who described this disease, though it is extremely dangerous, and, by his account, not very rare. It seizes those who are subject to it when they are walking, and particularly when they walk soon after eating, with a most disagreeable and painful sensation in the breast, which seems to threaten immediate destruction: but the moment they stand still, all the uneasiness vanishes. In all other respects the patients at the beginning of this disorder are well, and have no shortness of breath; from which the *angina pectoris* is totally different. After it has continued some months, the fits will not cease instantaneously on standing still; and it will come on not only when the patients are walking, but when they are lying down, and oblige them to rise up out of their beds every night for many months together. In one or two very inveterate cases, it has been brought on by the motion of a horse or carriage, and even by swallowing, coughing, going to stool, speaking, or by any disturbance of mind. The persons affected were all men, almost all of whom were above 50 years of age, and most of them with a short neck and inclining to be fat. Something like it, however, was observed in one woman, who was paralytic; and one or two young men complained of it in a slight degree. Other practitioners have observed it in very young persons.

When a fit of this sort comes on by walking, its du-

ration is very short, as it goes off almost immediately upon stopping. If it comes on in the night, it will last an hour or two. Dr Heberden met with one in whom it once continued for several days; during all which time the patient seemed to be in imminent danger of death. Most of those attacked with the distemper died suddenly: though this rule was not without exceptions; and Dr Heberden observed one who sunk under a lingering illness of a different nature.

The *os sterni* is usually pointed to as the seat of this malady; but it seems as if it was under the lower part of that bone, and at other times under the middle or upper part, but always inclining more to the left side; and in many cases there is joined with it a pain about the middle of the left arm, which appears to be seated in the biceps muscle.

The appearance of Dr Heberden's paper in the *Medical Transactions* very soon raised the attention of the faculty, and produced other observations from physicians of eminence; namely, Dr Fothergill, Dr Wall of Worcester, Dr Haygarth of Chester, and Dr Percival of Manchester. It also induced an unknown sufferer under the disease to write Dr Heberden a very sensible letter, describing his feelings in the most natural manner; which, unfortunately, in three weeks after the date of this anonymous epistle, terminated in a sudden death, as the writer himself had apprehended.

The youngest subject that Dr Fothergill ever saw afflicted

Angina Pectoris. afflicted with this disorder was about 30 years of age; and this person was cured. The method that succeeded with him was a course of pills, composed of the mass of gum pill, soap, and native cinnabar; with a light chalybeate bitter: this was continued for some months, after which he went to Bath several successive seasons, and acquired his usual health: he was ordered to be very sparing in his diet; to keep the bowels open; and to use moderate exercise on horseback, but not to take long or fatiguing walks.

The only symptom in this patient that is mentioned, was a stricture about the chest, which came on if he was walking up hill or a little faster than ordinary, or if he was riding a very brisk trot; for moderate exercise of any kind did not affect him: and this uneasy sensation always obliged him to stop, as he felt himself threatened with immediate death if he had been obliged to go forward.

It is the sharp constrictive pain across the chest, that (according to Dr Fothergill's observation) particularly marks this singular disease; and which is apt to supervene upon a certain degree of muscular motion, or whatever agitates the nervous system.

In such cases as fell under the inspection of Dr Fothergill, he very seldom met with one that was not attended with an irregular and intermitting pulse; not only during the exacerbations, but often when the patient was free from pain and at rest: but Dr Heberden observes, that the pulse is, at least sometimes, not disturbed; and mentions his having once had an opportunity of being convinced of this circumstance, by feeling the pulse during the paroxysm.

But no doubt these varieties, as well as many other little circumstances, will occur in this disease as they do in every other, on account of the diversity of the human frame; and if those which in general are found to predominate and give the distinguishing character be present, they will always authorise us in giving the name to the disease: thus, when we find the constrictory pain across the chest, accompanied with a sense of strangling or suffocation; and still more, if this pain should strike across the breast into one or both arms; we should not hesitate to pronounce the case an *angina pectoris*.

As to the nature of this disease, it appears to be purely spasmodic: and this opinion will readily present itself to any one who considers the sudden manner of its coming on and going off; the long intervals of perfect ease; the relief afforded by wine, and spirituous cordials; the influence which passionate affections of the mind have over it; the ease which comes from varying the posture of the head and shoulders, or from remaining quite motionless; the number of years for which it will continue, without otherwise disordering health; its bearing so well the motion of a horse or carriage, which circumstance often distinguishes spasmodic pains from those which arise from ulcers; and lastly, its coming on for the most part after a full meal, and in certain patients at night, just after the first sleep, at which time the incubus, convulsive asthma, and other ills, justly attributed to the disordered functions of the nerves, are peculiarly apt to return or to be aggravated.

From all these circumstances taken together, there can be little doubt that this affection is of a spasmodic

nature: but though it should be admitted, that the whole distress in these cases arise from spasm, it may not be so easy to ascertain the particular muscles which are thus affected.

The violent sense of strangling or choaking, which shows the circulation through the lungs to be interrupted during the height of the paroxysm; and the peculiar constrictive pain under the sternum, always inclining (according to Dr Heberden's observation) to the left-side; together with that most distressing and alarming sensation, which, if it were to increase or continue, threatens an immediate extinction of life; might authorise us to conclude that the heart itself is the muscle affected: the only objection to this idea, and, if it had been constantly observed, it would be insurmountable, is, that the pulse is not always interrupted during the paroxysm. The appearances in two of the dissections, favour the opinion that the spasm affects the heart; as in one subject the left ventricle (and, though it be not mentioned, we may presume the right one also) was found as empty of blood as if it had been washed; and in another, the substance of the heart appeared whitish, not unlike a ligament; as it should seem, in both cases, from the force of the spasm squeezing the blood out from the vessels and cavities.

If this hypothesis be allowed, we must conclude that the spasm can only take place in an inferior degree, as long as the patient continues to survive the paroxysm; since an affection of this sort, and in this part, of any considerable duration or violence, must inevitably prove fatal: and accordingly, as far as could be traced, the persons who have been known to labour under this disease have in general died suddenly.

The dissections also show, that whatever may be the true seat of the spasm, it is not necessary for the bringing of it on, that the heart, or its immediate appendages, should be in a morbid state; for in three out of the six that have as yet been made public, these parts were found in a sound state.

On opening the body of the poor gentleman who wrote the letter to Dr Heberden, "upon the most careful examination, no manifest cause of his death could be discovered; the heart, in particular, with its vessels and valves, were all found in a natural condition."

In the case communicated by Dr Percival to the publishers of the Edinburgh Medical Commentaries, "the heart and aorta descendens were found in a sound state." And in Dr Haygarth's patient, "on opening the thorax, the lungs, pericardium, and heart, appeared perfectly sound." Not to mention Dr Fothergill's patient (R. M.), in whose body the only morbid appearance about the heart was a small white spot near the apex. So that the cause, whatever its nature might have been, was at too great a distance, or of too subtle a nature, to come under the inspection of the anatomist. But there was a circumstance in two of the subjects that is worthy of remembrance; and which shows that the crasis of the blood, while they were living, must have been greatly injured, namely, its not coagulating, but remaining of a cream-like consistence, without any separation into serum and crassamentum.

From all that we have seen hitherto published, it

Angina
Pectoris.

does not appear that any considerable advances have been made towards the actual cure of this anomalous spasm.

The very judicious and attentive Dr Heberden (to whom the public are highly indebted for first making the disorder known) confesses, that bleeding, vomits, and other evacuations, have not appeared to do any good: wine and cordials, taken at bed-time, will sometimes prevent or weaken the fits; but nothing does this so effectually as opiates: in short, the medicines usually called *nervous* or *cordial*, such as relieve and quiet convulsive motions, and invigorate the languishing principle of life, are what he recommends.

Dr Wall mentions one patient, out of the 12 or 13 that he had seen, who applied to him early in the disease, and was relieved considerably by the use of antimonial medicines joined with the fetid gums: he was still living at the time the Doctor wrote his paper, (November 1772), and going about with tolerable ease. Two were carried off by other disorders; all the rest died suddenly.

Dr Fothergill's directions are chiefly calculated with the view to prevent the disorder from gaining ground, and to alleviate present distress. Accordingly he enjoins such a kind of diet as may be most likely to prevent irritability: in particular, not to eat voraciously: to be particularly abstemious in respect to every thing heating; spices, spirits, wines, and all fermented liquors: to guard most scrupulously against passion, or any vehement emotions; and to make use of all the usual means of establishing and preserving general health: to mitigate excesses of irritability by anodynes; or pains, if they quicken the circulation: to disperse flatulencies when they distend the stomach, by moderate doses of carminatives; amongst which, perhaps, simple peppermint water may be reckoned one of the safest. But since obesity is justly considered as a principle predisposing cause, he insists strongly on the necessity of preventing an increase of fat, by a vegetable diet, and using every other practicable method of augmenting the thinner secretions.

These were the only means which occurred to the English physicians of opposing this formidable disease: but Dr Smyth of Ireland has, we are told, discovered that it may be certainly cured by issues, of which Dr Macbride gives the following instance.

"A. B. a tall, well-made man; rather large than otherwise; of healthy parents, except that there had been a little gout in the family; temperate; being very attentive to the business of his trade (that of a watch-maker), led a life uncommonly sedentary; had, from his boyhood upwards, been remarkably subject to alarming inflammations of his throat, which seized him, at least, once in course of the year; in all other respects well.

"In 1767, (then 48 years of age), he was taken, without any evident cause, with a sudden and very dispiriting throbbing under the sternum. It soon afterwards increased, and returned upon him every third or fourth week, accompanied with great anxiety, very laborious breathing, choaking, a sensation of fulness and distension in the head, a bloated and flushed countenance, turgid and watery eyes, and a very irregular and unequal pulse. The paroxysm invaded, almost constantly, while he was sitting after

dinner; now and then he was seized with it in the morning, when walking a little faster than usual; and was then obliged to stop, and rest on any object at hand. Once or twice it came on in bed; but did not oblige him to sit up, as it was then attended with no great difficulty in breathing. In the afternoon fits, his greatest ease was from a supine posture; in which he used to continue motionless for some hours, until, quite spent and worn out with anguish, he dropt into a slumber. In the intervals between these attacks, which at length grew so frequent as to return every fourth or fifth day, he was, to appearance, in perfect health.

"Thus matters continued for more than two years; and various antispasmodics were ineffectually tried for his relief. In 1769, there supervened a very sharp constrictory pain at the upper part of the sternum, stretching equally on each side, attended with the former symptoms of anxiety, dyspnoea, choaking, &c. and with an excruciating cramp, as he called it, that could be covered with a crown-piece, in each of his arms, between the elbow and the wrist, exactly at the insertion of the pronator teres; the rest of the limb was quite free. The fits were sometimes brought on, and always exasperated, by any agitation of mind or body. He once attempted to ride on horseback during the paroxysm; but the experiment was near proving fatal to him. The difference of season or weather made no impression upon him. Still, in the intervals, his health was perfectly good; except that his eyes, which before his illness were remarkably strong and clear, were now grown extremely tender; and that his sight was much impaired. He had no flatulency of stomach, and his bowels were regular.

"In this situation, February 22. 1770, he applied to me for assistance. I had seen, I believe, eight or ten of these frightful cases before. Two of the patients dropt dead suddenly. They were men between 40 and 50 years of age, and of a make somewhat fleshy. The fate of the others I was not informed of; or, at least, cannot now recollect.

"Having found the total inefficacy of blisters and the whole class of nervous medicines in the treatment of this anomalous spasm, I thought it right to attempt the correcting or draining off of the irritating fluid in the case now before us. To this purpose, I ordered a mixture of lime-water with a little of the compound juniper-water, and an alterative proportion of Huxham's antimonial wine: I put the patient on a plain, light, perspirable diet; and restrained him from all viscid, flatulent, and acrimonious articles. By pursuing this course, he was soon apparently mended; but after he had persisted regularly in it for at least two months, he kept for some time at a stand. I then ordered a large issue to be opened on each of his thighs. Only one was made. However, as soon as it began to discharge, his amendment manifestly increased. The frequency and severity of the fits abated considerably; and he continued improving gradually, until, at the end of 18 months, he was restored to perfect health; which he has enjoyed, without the least interruption, till now, except when he has been tempted (perhaps once in a twelvemonth) to transgress rules, by making a large meal on salted meat, or indulging himself in ale or rum-punch, each of which never failed to disorder

Angina
Pectoris.

Angina
Pectoris.

order him from the beginning of his illness: and even on these occasions, he has felt no more than the slightest motion of his former sufferings; insomuch that he would despise the attack, if it did not appear to be of the same stock with his old complaint. No other cause has had the least ill effect on him.

"Though rum was constantly hurtful, yet punch made with a maceration of black currants in our vulgar corn-f^rirrit, is a liquor that agrees remarkably well with him.

"He never took any medicine after the issue began to discharge; and I have directed that it shall be kept open as long as he lives. The inflammations of his throat have disappeared for five years past; he has recovered the strength and clearness of his sight; and his health seems now to be entirely re-established."

Dr Macbride, in a letter to Dr Duncan, published in the Edinburgh Medical Commentaries, gives the following additional observations on this disease.

"Within these few weeks I have, at the desire of Dr Smyth, visited, three or four times, a very ingenious man who keeps an academy in this city, of about 34 years of age, who applied to the Doctor for his advice in January last.

"I shall give you his symptoms as I had them from his own mouth, which appear to me to mark his case to be an angina pectoris, and as deplorable as any that I have read of. It was strongly distinguished by the exquisite constrictory pain of the sternum, extending to each of his arms as far as the insertion of the deltoid muscle, extreme anxiety, laborious breathing, strangling, and violent palpitation of the heart, with a most irregular pulse. The paroxysms were so frequent, that he scarcely ever escaped a day, for six or seven years, without one. They were usually excited by any agitation of mind or body, though slight. He had clear intervals of health between the fits. The distemper seems hereditary in him, as he says his father was affected in the same manner some years previous to his death. He has a strong gouty taint, which never showed itself in his limbs; and he has led a life of uncommon sedentariness, from intense application to mathematical studies, attention of mind, and passion, even from his boyish years. These circumstances may, perhaps, account for his having been taken with this disease at so early an age as 17.

"A large issue was immediately opened in each of his thighs. In a month afterwards he began to mend, and has gone on improving gradually. He can now run up stairs briskly, as I saw him do no later than yesterday, without hurt; can bear agitation of mind; and has no complaint, excepting a slight oppression of the breast, under the sternum, which he feels sometimes in a morning, immediately after dressing himself, and which he thinks is brought on by the motion used in putting on his clothes; though for a complete week preceding the day on which I saw him last, he told me that he had been entirely free from all uneasiness, and was exulting that he had not had such an interval of ease for these last seven years.

"Doctor Smyth also showed me, in his *adversaria*, the case of a gentleman who had been under his care in 1760, which he had forgotten when my book went to the press, and which he was reminded of the

other day by a visit from his patient. It was a genuine angina pectoris, brought on by a very sedentary life, and great vexation of mind, clearly marked by the exquisite pain under the sternum, that extended acutely to the upper extremities, particularly along the left arm, together with the other symptoms of dyspnoea, anxiety, palpitation of the heart, &c. recited in the case above. The disorder went off in 1762, by large spontaneous discharges from the piles, but returned upon him severely in 1765. Issues in his thighs were then recommended to him, but not made. But, whether it was by the persuasion of some friend, or of his own accord, he went into a course of James's powder, in small alterative doses, combined with a little castor and asafoetida. This he persisted in for about six weeks; in the meanwhile, he had large acrimonious gleetings from the scrotum, and a plentiful discharge of ichor from the anus.—From this time he began to find his complaints grow less and less distressing, and he has now been totally free from them for six years past."

The PUERPERAL, or CHILD-BED FEVER.

404

THIS species of fever, as its name imports, is peculiar to women in child-bed; and is usually the most fatal of all the disorders to which the sex is liable. But, notwithstanding the prevalence of it in all ages, its real nature has remained, to the present time, a subject of much dispute and uncertainty. The critical period of its invasion, when febrile commotions are apt to be excited by various accidents, and the equivocal symptoms which accompany it, have even afforded room for questioning whether it be a primary or a secondary disease. Some writers have considered it as proceeding entirely from an inflammation of the uterus; others have imagined it to be the consequence of an obstruction to the secretion of the milk; while the greater number has been inclined, for reasons equally if not more plausible, to impute it to a suppression of the lochia. If we examine this fever attentively, however, according to its natural course, and independently of all the accidental concomitant symptoms with which it is not essentially connected, we may safely pronounce it to be a primary disease of a particular character, and perhaps not the necessary consequence of any of the causes above-mentioned.

This fever is most generally incident to women within 48 hours after delivery, though it may supervene on the fourth or fifth day, and sometimes considerably later. It is preceded, like other fevers, by a rigor, which is commonly violent; and, when happening during the time of labour, may be confounded with the pains of parturiency. In its earlier stage it is attended with the signs of inflammation. A great pain is felt in the back, hips, and the region of the uterus; which, in the part last mentioned, is accompanied with the sense of heat and throbbing. A sudden change in the quality or quantity of the lochia now also takes place; the patient is frequently troubled with a tenesmus; and the urine, which is very high coloured, is discharged in small quantity and with pain. At the first attack of the fever, the woman is generally seized with a vomiting of porraceous matter, as in the *cholera morbus*, to which disease it then bears a strong resemblance.—But instead of this symptom, there is sometimes only

Angina
Pectoris.

Puerperal
Fever.

a nausea, or loathing at the stomach, with a disagreeable taste in the mouth. The belly swells to a considerable bulk, and becomes susceptible of painful sensations from the slightest impression. The tongue is generally dry, though sometimes moist, and covered with a thick brownish fur. When the fever has continued a few days, the symptoms of inflammation usually subside, and the disease acquires a more putrid form. At this period, if not at the very beginning of the disorder, a bilious or putrid diarrhoea, of a dangerous and obstinate nature, supervenes, and accompanies it through all its future progress; each motion to stool being preceded by a temporary increase, and followed by an alleviation of pain. The patient usually nauseates all kind of food and drink, except what is cold and acidulated. A brown or blackish sordes, the consequence of putrid exhalations, adheres to the edges of the teeth; a troublesome hiccup is at length produced, which greatly exasperates the pains of the abdomen; petechiæ or vibices also appear, with sometimes a miliary eruption, but which produces no mitigation of the disease. Through the whole course of the fever, the patient is affected with great anxiety and dejection of spirits.

Such in general is the course of the puerperal fever; the symptoms of which, however, may be often varied, according to the constitution of the patient, the degree of the disease, and its earlier or later invasion. When the woman is naturally weak, or her strength has been greatly reduced by immoderate evacuations after delivery; when the disease is violent, and immediately follows that period; its progress and termination are proportionably rapid and fatal. In such unfortunate circumstances, many have been known to expire within 24 hours from the first attack of the disease; nay, there are some instances where the rigor has concluded the scene. The catastrophe, however, is most generally suspended for some days; and the number of these is variable, though the 11th from the commencement of the fever may justly be fixed as the period which is usually decisive. In whatever stage of the disease an unfavourable termination may happen, it would seem as if the commencement of the patient's recovery were not marked by any critical revolution of the fever, as depending on an alteration of the humours; but that the cure is gradually effected, either by a spontaneous vomiting, or a long-continued discharge by stool of that porraceous matter, the existence of which in the stomach is usually evinced at the first attack of the disease. The most unfavourable prognostic, therefore, arises from such a weakness of the patient as renders her unable to support so tedious an evacuation as that by which the fever is overcome. When the lochia return to their former state, when the swelling and tenderness of the abdomen abate, and there is a moisture on the skin, we have reason to hope for a happy termination of the disease.

Though the puerperal fever may generally be ascertained from the description which has been given, and chiefly by that remarkable tenderness of the abdomen which particularly distinguishes it; yet, as some of its symptoms may be confounded with those arising from other diseases, and which require a different method of cure, it will be proper to mention here the circum-

stances whereby it may be known with greater certainty.

The pains of the abdomen, attending the child-bed fever, may be distinguished from those called *after-pains*, by their uninterrupted continuance through the course of the disease, though sometimes they suffer exacerbations; whereas, in the latter, they often totally intermit. They are also distinguishable by the absence of fever with concomitant symptoms in the one, and their evident existence in the other.

Many circumstances evince a dissimilarity between the puerperal and miliary fevers, notwithstanding the symptoms of anxiety and oppression are common to both; insomuch that the nature of the approaching disease may be ascertained at the very commencement of its attack. In the puerperal fever the rigor is more violent, of longer duration, and not interrupted, as in the other. The pulse is fuller and stronger; the skin is more hot; and the tongue, whether moist or dry, though generally the latter, is not of a white, but brownish appearance; and the urine is also higher coloured. Eruptions, which are critical in miliary fevers, procure no mitigation of the puerperal fever, and cordials generally increase it.

When the original attack of the puerperal fever happens to coincide with the febrile commotion which is excited in child-bed women by the milk, the nature of it may at first be misapprehended; but the concomitant symptoms, and greater violence of the disease, must in a short time dissipate such an error.

From all the most accurate accounts of this disease, and from the period at which it generally commences, there seems reason to conclude, that it owes its rise more immediately to accidents after delivery. For it is allowed that it may follow a labour under the best and most favourable circumstances, though endeavours to dilate the os internum are supposed frequently to produce it. The more immediate causes generally assigned by authors are a stoppage of perspiration, the too free use of spices, and the neglect of procuring stools after delivery; sudden frights, too hasty a separation of the placenta, and binding the abdomen too tight. The putrid appearance, however, which this disease so soon assumes, affords ground to suspect that the predisposing cause of it is a vitiated state of the humours; for it is generally observed to be most prevalent in an unhealthy season, and among women of a weakly and scorbutic constitution.

Within these few years this fever has been treated of by several writers, most of whom have differed from each other in their sentiments of the nature of the disease. The first in the order of publication is Dr Denman, who seems to be of opinion, that it may derive its origin either from a redundancy or too great acrimony of the bile, the secretion of which appears to be much interrupted in the time of gestation. In Dr Manning's treatise on this fever, he mentions its being highly probable that such a cause contributes greatly to produce the disease, especially where the putrid tendency of the humours is increased by unwholesome air and diet.

It has likewise been the fate of the puerperal fever, that no disease has more divided the sentiments of physicians in regard to the method of cure. The apparent

Puerperal
Fever.

Puerperal
Fever.

rent indications and contra-indications of bleeding, and other remedies, arising from the complication of inflammatory and putrid symptoms; the equivocal appearance of the vomiting and purging, as whether they be critical or symptomatical; and the different causes whence symptoms similar to each other may arise in pregnant women; all these circumstances concur to involve the subject in great obscurity and indecision. If we carefully attend to the several characteristics of the disease, however, so as to be able to distinguish it from every other puerperal complaint, and observe at the same time the usual manner of its declension, our judgment may be guided in the method of cure by the salutary efforts of nature. But, in order to obtain a clearer view of the genuine indications, it will be proper to consider them under the several lights in which they have been generally agitated by authors.

One of the most essential points to be ascertained in the cure of the child-bed fever, respects the propriety of bleeding. A free use of the lancet has been generally regarded as the most successful expedient in practice; and there are some instances of critical hæmorrhagies which would seem to confirm its utility. But Dr Denman thinks we may safely affirm from experience, that for one who will be benefited by large bleeding, a much greater number will be injured, and that even almost irretrievably. Nor can this seem surprising, when we consider the situation of child-bed women. In most, the evacuations consequent upon delivery are sufficient to diminish any undue superabundance of the fluids; and if, as frequently happens, the disease be produced by too hasty a separation of the placenta, the consequence of which is generally a very copious discharge of blood, we can never suppose that nature will be assisted in overcoming the febrile commotion, by the farther evacuation of the vital fluid, through the defect of which she is now rendered unequal even to the ordinary support of the animal œconomy. We may appeal to every practical physician, how much he has known the pulse to sink, and what a train of nervous symptoms he has observed to succeed an excess of the discharge abovementioned. Besides, it is an axiom in physic, that a remedy which cures any disorder, will always prove sufficient to prevent it; and therefore, if bleeding were the proper cure in the child-bed fever, the disease ought to have been prevented by a large evacuation of blood, when that happened previous to its seizure. Experience, however, in this, as in all other diseases, is the only unerring guide we can follow; and whoever regulates his practice by fact and observation, will be convinced that bleeding, especially in a larger quantity, is, in general, very far from being attended with success. Bleeding is seldom proper, except in women of plethoric constitutions, and in whom the signs of inflammation rise high. Nor even in such patients ought it to be repeated without great caution, and the existence of strong indications. Bleeding, when used in proper circumstances, may unquestionably palliate the fever; but that it often shortens the duration of it, appears to be a matter of much doubt. On this account the practice becomes still more suspicious and exceptionable, when we consider that by venesection improperly used the person's strength may be so far reduced as not to

support the tedious looseness by which the disease is generally carried off. Though bleeding, however, ought in general to be used with great caution, there are certainly many cases in which it is both necessary and advantageous.

The genuine nature and effects of the looseness in this disease, is another controverted point of the highest importance, and which merits the most attentive inquiry. Physicians, observing that women who die of the puerperal fever are generally molested with that evacuation, have been induced to consider this symptom as of the most dangerous and fatal tendency; and what, therefore, we should endeavour by every means to restrain. In this opinion, however, they would seem to have been governed by too partial an observation of facts. For experience certainly authorises the assertion, that more women appear to have recovered of the child-bed fever, through the intervention of a diarrhœa, than have been destroyed by that cause. If it also be considered, that purging is usually almost the only sensible evacuation in the more advanced state of the disease, and is that which accompanies it to its latest period, we shall have the strongest reason to think that it is critical rather than symptomatical, and ought therefore to be moderately supported, instead of being unwarily restrained. Nay, the advantage which is found to attend vomiting as well as purging, in the earlier stage of the disease, would seem to evince that the matter discharged by these evacuations is what chiefly foment the disease. Emetics and purgatives, therefore, in the opinion of Dr Manning, are the only medicines on which any rational dependence is to be placed in this fever; at least, they are certainly such as are found the most successful. It is an established rule in practice, to prescribe a vomit at the beginning of every fever attended with any nausea or loathing of the stomach, and where there is not any reason to apprehend an inflammation of that organ. Nor does the state of child-bed women afford the smallest ground for prohibiting our recourse to the same expedient in answering a similar indication.

It is so seldom a physician is called during the rigor preceding the puerperal fever, that he has few opportunities of trying the effects of remedies in that early state of the disease. When such occur, however, we should endeavour as much as possible to abate and shorten that period, as the succeeding fever is generally found to bear a proportion to the violence and duration of it. For this purpose, warm diluting drinks should be plentifully used, with a small quantity of volatile spirits or brandy. When Dr Manning apprehended such an accident, he sometimes ordered the nurse to give immediately a dish or two of warm sack-whey; taking care that it was not too strong, which is a caution that ought always to be remembered: for though a freer use of the more cordial and spirituous kinds of liquors might perhaps soon abate the rigor, there is danger to be feared from their influence on the approaching fever, especially in women of a strong and healthy constitution. In all cases, warm applications to the extremities, such as heated bricks, towels, or toasted grains in a linen bag, may be used with perfect safety, and some advantage.

When the hot fit is advanced, the first thing Dr Manning orders is some emollient injection, as chicken-water,

Puerperal
Fever.

Puerperal
Fever.

water, or water and milk, which ought to be frequently repeated through the course of the disease. These prove beneficial, not only by promoting the discharge from the intestines, which seems in fact to be the solution of the disease; but also by acting as a kindly fomentation to the uterus and adjacent parts. With this intention they are particularly serviceable when the lochia are suppressed. Great care, however, is requisite in administering them, on account of the tenderness and inflammatory disposition, which at that time render the parts in the pelvis extremely susceptible of pain.

The next step in the method of cure ought to be to promote the discharge of the morbid matter both by the stomach and intestines. This intention is best answered by the remedy prescribed by Dr Denman, of which the following is the receipt.

R. Tartar. emetic. gr. ii.

Ocul. cancror. præp. ℥i. Intimè misceantur.

Of a powder thus prepared, Dr Denman gives from two to six grains, and repeats it as circumstances require. If the first dose do not procure any sensible operation, he repeats it in an increased quantity at the end of two hours, and proceeds in that manner; not expecting any benefit but from its sensible evacuation.

Should the disease be abated, but not removed, (which sometimes happens), by the effect of the first dose, the same medicine must be repeated, but in a less quantity, till all danger be over. But if any alarming symptoms remain, he does not hesitate one moment to repeat the powder, in the same quantity as first given; though this be seldom necessary, if the first dose operates properly.

It is to be observed, says Dr Denman, that as the certainty of cure depends upon the proper repetition of the medicine, the method of giving it at stated hours does not appear eligible. If the first dose produce any considerable effect by vomiting, procuring stools, or plentifully sweating, a repetition of the medicine in a less quantity will seldom fail to answer our expectations; but great judgment is required in adapting the quantity first given to the strength of the patient and other circumstances. We are not to expect that a disease which from the first formation carries so evident marks of danger, should instantly cease, even though a great part of the cause be removed.

Frequent doses of the saline draughts ought also to be given, which not only promote the evacuation by the intestines, but likewise increase the salutary discharges of urine and perspiration. These medicines are particularly serviceable in subduing the remains of the fever, after its violence has been broken by the more efficacious remedies above mentioned; but when they are used even in the decline of the disease, gentle laxatives of rhubarb and magnesia, as advised by Dr Denman, ought to be frequently interposed, since, as he justly observes, without stools we can do little service.

Notwithstanding the discharge by the intestines appears to have the most salutary effect in this disease, yet when the stomach has not been properly unloaded of offensive matter, though a great nausea and sickness had indicated the expediency of such an evacuation at the beginning of the fever, the continuance of

No. 209.

the looseness is sometimes so long protracted as in the end to prove fatal. In this alarming state of the disease, when the stools are very frequent and involuntary, and all appearances threaten danger, Dr Denman says, that a clyster of chicken-water injected every one, two, or three hours, or as often as possible without fatiguing the patient too much, with the following draught taken every six hours, has produced better effects than could be expected.

R. Pulv. rad. ipecacuan. gr. i.

Confect. Damocrat. ℥i.

Aq. alexiter. simp. vel.

Cinnamom. simp. ʒiss. M. f. Haustus.

While these medicines are using, we should endeavour to mitigate the pains of the belly by relaxing applications. During the course of the disease, the patient ought to drink freely of diluting liquors, and abstain from every thing of a heating quality, unless great faintness should indicate the use of a small quantity of some cordial medicine.

Such is the practice recommended in this disease by Dr Denman. We shall now take a cursory view of the sentiments of succeeding writers on this subject.

According to Dr Hulme, the proximate cause of the puerperal fever is an inflammation of the intestines and omentum; for the confirmation of which opinion he appeals to dissections. He supposes the chief predisponent cause of the disease to be the pressure of the gravid uterus against the parts above mentioned. The omentum, says he, in the latter stage of pregnancy, must either be flat, which is its natural situation, or be rumpled or carried up by the gravid uterus in folds or doublings. When the latter is the case, which he observes is probably not seldom, the danger of a strangulated circulation will be greater.

Mr White, who has also written on this disease, judiciously remarks, that were Dr Hulme's hypothesis well founded, the disorder ought rather to take place before delivery, and be immediately removed at that period: That it would likewise most generally happen to women at their first labour, when the abdominal muscles are less yielding, and the pains more violent; the contrary of which is most frequently experienced to be the case.

It also deserves to be remarked, that, upon Dr Hulme's supposition, we cannot account for the disease being more common and fatal in large towns and in hospitals, than in the country and private practice, while other inflammatory disorders are more endemic among those who live in the latter than the former situation. Even admitting the friction of the intestines and omentum against the uterus to be as violent as Dr Hulme supposes, is it not highly improbable, that any inflammation could be occasioned by the pressure of such soft substances upon each other? Or, were this effect really produced, ought not the puerperal fever to be more common and fatal after the most laborious deliveries? But this observation is not supported by experience.

Dr Hulme, in favour of his own hypothesis, alleges that it gives a satisfactory answer to the question, "Why all lying-in women have been, and ever will be, subject to this disease?" In this proposition, however, the Doctor supposes such an universality of the disease as is not confirmed by observation. It is affirmed

Puerperal
Fever.

Puerperal
Fever.

firmed upon undoubted authority, that in many parts of Britain the puerperal fever is hardly known; whereas, were it really produced by the causes he assigns, it would be equally general and unavoidable.

But how peculiar soever this author's sentiments are in respect of the proximate cause of this disease, they have not led him to any method of cure different from the established practice. On this subject Dr Hulme divides his observations into two parts, comprehending under the former the more simple method of treatment, and under the latter the more complex. He set out with remarking, that the patient being generally costive at the beginning of the disease, an emollient opening clyster will often give immediate relief; but if this should not prove effectual, recourse must be had to cathartics. Those which he found answer his purpose best, were the *sal catharticus amarus*, the *oleum ricini*, emetic tartar, and antimonial wine. When the bowels have been sufficiently cleared and the pain abates, he advises encouraging a gentle diaphoresis by medicines which neither bind the body nor are heating; such as small doses of ipecacuan, emetic tartar, and antimonial wine, combined with an opiate in a moderate dose, and given once or twice in the course of 24 hours; administering the saline draughts in the intermediate spaces. If, preceding or during this course, a sickness at stomach or vomiting attend, he advises assisting the efforts of nature, by drinking plentifully of camomile tea, warm water, or any other diluting liquor. He concludes with recommending a cooling regimen, rest of body, and tranquillity of mind; prohibiting all kinds of bandage upon the abdomen, and enjoining particular attention to the state of the bowels, which ought to be kept gently open for some time, even after the disorder seems to be gone off, till the patient be quite out of danger.

So much for the simple treatment: we now proceed to the second part, where he describes the method of practice when the disease is in its more irregular and complicated state.

When a diarrhoea accompanies the disease, he observes that it ought by no means to be checked, but supported, by ordering the patient to drink plentifully of mild aperient liquors. If the pain of the hypogastric region be attended with stitches in the sides or over the pit of the stomach, and a pulse that resists the finger pretty strongly, he remarks that bleeding would then be highly necessary: declaring, however, his opinion, that, in the puerperal fever, bleeding is to be considered only as a secondary means of relief, though the first in point of time; that it ought to be advised with great caution; and that the greatest dependence is always to be placed upon evacuations by stool.

Mr White, above mentioned, imputes the puerperal fever to a putrescent disposition of the humours, contracted during pregnancy, and fomented by the hot regimen commonly used by women in child-bed. In conformity to this opinion, the chief means which he recommends for preventing the disease is a cool regimen and free circulation of air, which he evinces to be of the greatest importance. In respect of bleeding, he informs us, that, upon the strictest inquiry, he cannot find that those who have bled the most copiously have had the greatest success, either in private or hospital practice. He even seems to question the pro-

Vol. XI. Part I.

priety of this evacuation in any case; but approves of emetics, cathartics, and clysters, for cleansing the *primæ viæ*, and likewise of such medicines and diet as will correct the putrid humours: adding, that an upright posture and free ventilation are at all times useful, and absolutely necessary, both for the prevention and cure of the disease.

Another writer who treats of the child-bed fever is Dr Leake, who has published the result of his observations on this disease from April 1768 to the autumn of the year 1770; but chiefly from December 1769 to May 1770, during which period the child-bed fever prevailed much about London.

Dr Leake tells us that this fever generally commenced the evening of the second or morning of the third day after delivery, with a rigor or shivering fit. Sometimes it invaded soon after delivery; and at other times, though rarely, it has seized so late as the fifth or sixth day. Now and then it seemed to be occasioned by catching cold, or by errors in diet; but oftener by anxiety of mind. Sometimes the thirst was great; though the tongue had, in general, a better appearance at the beginning than is common in other fevers. It was seldom ever black or very foul; but, as the disease advanced, became white and dry, with an increase of thirst; and at last was of a brownish colour towards the root, where it was slightly covered with an inspissated mucus. The loss of strength was so great and sudden, that few of the patients could turn in bed without assistance, even so early as the first or second day after the attack. The lochia, from first to last, were not obstructed, nor deficient in quantity; neither did the quality of this discharge seem to be in the least altered from its natural state; a presumption, says the author, that the uterus was not at all affected. Of this he was convinced by making a considerable pressure above the pubes with the hand, which did not occasion pain; but when the same degree of pressure was applied higher, between the stomach and umbilical region, it became almost intolerable. A perfect crisis seldom if ever happened in this fever, which he imputes to the great oppression of the vital powers, whereby they were rendered unable to produce such an event. When the disease proved mortal, the patient generally died on the 10th or 11th day from the first attack. In those who died of the fever, the omentum was found suppurated; an inflammation of which part, or of the intestines, Dr Leake concludes to be the proximate cause of the disease.

In consequence of this idea of the cause of the disease, Dr Leake affirms that venesection is the only remedy which can give the patient a chance for life. But, though it be the principal resource to be depended upon at the beginning of the fever, he observes that it will seldom prove of service after the second or third day; and, if directed yet later, will only weaken and exhaust the patient; when, matter having begun to form in the omentum, the progress of the disease can no longer be prevented by that evacuation. At this period the blood begins to be tainted by the absorption of the purulent fluid; and the fever, from being inflammatory, is changed into a putrid nature.

After bleeding in such a quantity as the symptoms require, he advises that the corrupted bile be evacuated and corrected as soon as possible; that the diar-

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Puerperal
Fever.

Puerperal
Fever.

rheea, when excessive, be restrained by emollient anodyne clysters and gentle sudorifics, or even by opiates and mild astringents, when the patient's strength begins to sink under the discharge; and, lastly, that where the signs of the putrefaction or intermission take place, antiseptics and the Peruvian bark may be administered.

The great uniformity of the symptoms in all Dr Leake's patients might authorise an opinion, that the fever which he describes was in a great measure a disease *sui generis*, and depended much upon the constitution of the air preceding and during the period in which the fever prevailed.

Dr Kirkland has also made judicious observations on this subject. He rejects the opinion that the puerperal fever is a disease *sui generis*, and arises always from the same cause. The particular situation of child-bed women, he acknowledges, occasions a similarity in the appearance of all the febrile symptoms: but he affirms that the same kind of fever may be produced by various causes; for instance, by an inflammation of the uterus or abdomen, by putrid blood or other matter, and putrid miasms. The symptoms, he observes, will vary according to the time of seizure. If the fever happens in three or four days after delivery, all the symptoms usual to the situation of the patient will make their appearance; but if it do not invade till the milk has been secreted, and the lochial discharge be nearly finished, the symptoms, if the breasts are properly drawn, will, for the most part, be those only which are common to that kind of disorder by which the fever has been produced.

With respect to the cure of puerperal fevers, Dr Kirkland advises the antiphlogistic method when they arise from inflammation; but when this method fails of success, and a diarrhoea supervenes, the disease has changed its nature, having become more or less putrid, and requires a very different treatment.

His observations relative to the management of the diarrhoea merit attention. No one, says he, would purge and bleed to cure the colliquative fever arising from the absorption of matter in large wounds; and yet the only difference is, that in the puerperal fever the matter absorbed from the uterus, &c. acts with more violence, because the blood is commonly thinner and the habit in a more irritable state. We see, continues he, that absorbed matter purges as effectually as if any purging medicine had been given by the mouth; and may we not therefore do harm by additional purging, when there has been a large evacuation, especially as purges in this case are incapable of entirely removing the *fomes morbi*?

He considers the Peruvian bark as the principal remedy, as soon as the pulse sinks, the heat is lessened, and the stomach will bear it. If the bark increase the diarrhoea beyond moderation, he joins with it small doses of laudanum; but if the diarrhoea should entirely stop without the fever going off, in place of laudanum he advises a proper quantity of rhubarb. Should the diarrhoea, notwithstanding the use of the medicines proposed, become so violent as to endanger the patient, he joins Mr White in recommending the columbo root, which is a warm cordial, and removes the irritability of the stomach and intestines more powerfully than any other bitter he knows.

Puerperal
Fever.

Of this disease also, as it appeared in Derbyshire and some of the adjacent provinces, an account has been published by Dr Butter. Concerning the causes and nature of the disease, he observes, that pregnancy seems to add much to the natural sensibility of the female constitution; because at this period women are often subject to a train of nervous symptoms, which never molest them at other times. During gestation likewise, the appetite is for the most part keen, while the digestion appears to be impaired; and this weakness is increased not only by improper food, of which the woman is frequently desirous, but also by the inactivity attending her situation. To these circumstances, it is added, that the intestinal passage being interrupted by the uterine pressure, costiveness generally prevails. From the several observations here enumerated, Dr Butter concludes, that the proximate cause of the puerperal fever is a spasmodic affection of the first passages, with a morbid accumulation in their cavity; and upon this supposition he endeavours to account for the various symptoms of the disease.

In treating of the method of cure, he lays down two indications; the former of which is to promote two, three, or four stools daily, in a manner suited to the strength of the patient, till such time as they resume a natural appearance. The second indication is to relieve all uneasy symptoms, such as heat, thirst, head-ach, &c.

With respect to the opinion entertained by Dr Butter of the cause of the puerperal fever, it nearly coincides with that of Mr White. But however plausible it may appear, we are not entirely satisfied that a disease attended with so peculiar symptoms as the puerperal fever can depend principally upon an irritability, which is not restricted either to the pregnant or puerperal state.

The late Dr Thomas Young professor of midwifery in the university of Edinburgh, although he published nothing on the subject of the puerperal fever, wrote a very ingenious dissertation respecting it, which was read in the Philosophical Society of Edinburgh. In that dissertation, after giving a very accurate account of the symptoms of the disease, which coincides very nearly with the account given by others, he endeavours to show, that the *puerperal fever*, strictly so called, is in every instance the consequence of contagion; but he contends, that the contagious matter of this disease is capable only of producing its effect, in consequence of a peculiar predisposition given by delivery and its consequences. In support of this doctrine, he remarks, that for many years the disease was altogether unknown in the lying-in ward of the Royal Infirmary at Edinburgh; but that after it was once accidentally introduced into the hospital, almost every woman was in a short time after delivery attacked with it; although prior to her delivery, she may have lain even for weeks together, not only in the same ward with the infected, but even in the very next bed. He remarks, that it was only eradicated from the hospital in consequence of the wards being entirely emptied, thoroughly ventilated, and new painted. After these processes, puerperal females in the hospital remained as free from this disease as formerly. The puerperal fever, according to Dr Young, has very generally a strong tendency to the typhoid type; although he allows, that in

Puerperal
Fever.

in the beginning it is not unfrequently attended with inflammatory symptoms, and even with topical inflammation, particularly in the intestinal canal. On this idea, he considers the puerperal fever as admitting of the same variety of treatment with other affections depending on contagion, in which sometimes an inflammatory, sometimes a putrescent tendency, prevails; such, for example, as small-pox or erysipelas. But from the prevailing putrescent tendency in this affection, he considers the free access of cool air, with the liberal use of antiseptics, as being very generally requisite.

It deserves to be remarked, that though the several writers who treat of this subject have conducted their method of cure conformably to their particular idea of the cause of the disease, respecting which their sentiments are very different, they seem to have been equally successful in the treatment of their patients. Indeed the several writers differ less from each other in their method of cure than might be expected, where so great an opposition of theoretical sentiments prevails. For after endeavouring to establish indications correspondent to their particular systems, those who contend for the expediency of promoting the intestinal discharge, dissuade not from a recourse to phlebotomy when the disease is attended with inflammatory symptoms; while, on the other hand, the most strenuous advocates for bleeding admit the utility of the former evacuation. It appears, therefore, that a due regulation of the alvine discharge is necessary through the whole course of the fever, but venesection only sometimes.

CEPHALALGIA.

HEAD-ACH.

The head-ach is symptomatic of very many distempers, but is rarely an original disease itself. Dr Home acquaints us that his report-books only furnish four instances of it; and of these four, three were women. The disease proved fatal to the man; and after death, a considerable effusion of blood was found on the brain, together with some hydatids, and water in the ventricles.

Head-achs appear frequently to be occasioned by effusions of blood or serum; as well as by ulcers, and abscesses of the brain, dura and pia mater. Accretions and ossifications of different parts of the dura mater, falx, and brain, are also frequently discovered. An ossification of the falx, however, does not always produce head-ach: for Dr Home mentions a patient who had the falx ossified without head-ach; but he had been observed to be very furious when drunk. Congestions of blood in the vessels of the brain are also discovered from dissections to be a frequent cause of the head-ach; and nervous irritation alone will frequently produce it, as we see in the *clavus hystericus*.

In the cure of this disease we have little or no power over ossifications, effusions, or ulcerations; and hence the head-ach is frequently incurable. In congestions, and nervous affections, medicines may indeed be of some service. Congestion may be relieved by an evacuation of blood, either general or topical; as venesection, cupping, or leeches: by errhines; which, however, Dr Home thinks are little to be depended upon; by topical evacuations near the head by blisters, issues,

or setons; by purgatives; or by determining the fluids to other parts, by rubefacients applied to the temples, pediluvia, &c.

Nervous irritation may be diminished, 1. By a great quantity of cold water drunk every morning. This is recommended by Hoffman; and will wash off all acrid particles from the stomach, while the cold strengthens and diminishes the sensibility of the part. This remedy was tried for a considerable time in one of Dr Home's patients without any effect. 2. Nervous and tonic medicines; as the bark, valerian, &c. These were tried in two of Dr Home's patients, but also without success. In a third the valerian succeeded. 3. By cold water applied to the head, immersion, or the shower-bath. 4. Cephalics; as lavender, rosemary, &c. In slight cases, the smell of eau de luce, or any strong volatile alkali, will generally prove a cure.

A Dangerous AFFECTION of the ŒSOPHAGUS.

406

This distemper has only been treated of by Dr Munckley, who reckons it one of the most deplorable diseases of the human body. Its beginning is in general so slight as to be scarce worth notice, the patients perceiving only a small impediment to the swallowing of solid food: they usually continue in this state for many months; during which, all liquid foods, and even solids themselves, when cut small and swallowed leisurely, are got down without much difficulty: by degrees the evil increases, and the passage through the œsophagus becomes so narrow, that not the smallest solid whatever can pass through it; but, after having been detained for some time at the part where the obstacle is formed, is returned again with a hollow noise of a very peculiar kind, and with the appearance of convulsion.

The seat of this malady is sometimes near the top of the œsophagus, and at other times farther down, nearer the superior orifice of the stomach. In this last case, the part of the alimentary tube which is above the obstruction is frequently so dilated by the food which is detained in it as to be capable of containing a large quantity; and the kind of vomiting, by which it is again returned through the mouth, comes on sooner or later after the attempt to swallow, in proportion to the nearness or remoteness of the part affected. In the last stage of this disease, not even liquids themselves can be swallowed so as to pass into the stomach, and the patient dies literally starved to death.

On the dissection of such as have died in this manner, the œsophagus is found to be considerably thickened; and in some so contracted within at the diseased part, as scarcely to admit the passing of a common probe; in others, to adhere together in such a manner as entirely to close up the passage, and not to be separated without great difficulty.

He comes next to show what he has found to be the most efficacious method of treating this disease, which, though not uncommon, yet in general has been considered as incurable.

He claims not the merit of having discovered the method of cure, but hopes that some service may arise from publishing what his experience has confirmed to him; having first received the hint from another eminent physician.

The only medicine, then, from the use of which he has ever found any service, is mercury; and in cases which are recent, and where the symptoms have not risen to any great height, small doses of mercury given every night, and prevented, by purgative medicines, from affecting the mouth, have accomplished the cure.

But where the complaint has been of long standing, and the symptom has come on of the food's being returned through the mouth, a more powerful method of treatment becomes necessary. In this case he has never found any thing of the least avail in removing any of the symptoms, but mercury, used in a such a manner as to raise a gentle but constant spitting: and this method he has pursued with the happiest success. If this method be commenced before the complaint has gained too much ground upon the constitution, the case is not to be despaired of; and of those who have come under his care in this state, by much the greater part have received considerable benefit from it, and many have been entirely cured.

The complaint itself, he observes, is not very uncommon; but there is no instance, to his knowledge, recorded, of success from any other manner of treating it, than that he has recommended.

WORMS.

Those infesting the human body are chiefly of three kinds: the *ascarides*, or small round and short white worms; the *teres*, or round and long worm; and the *tania*, or tape-worm.

The *ascarides* have usually their seat in the rectum.—The *teres* or *lumbrici* are about a span long, round and smooth: they are seated for the most part in the upper small intestines; but sometimes they are lodged also in the stomach, and in any part of the intestines, even to the rectum.—The tape-worms are from two to forty feet long, according to the testimony of Platerus; they generally possess the whole tract of the intestines, but especially the ileum: they very much resemble a tape in their appearance, whence the name of *tape-worm*: but another species of this genus, from the resemblance of each joint to a gourd seed, has the name of the *gourd-worm*.

In the Medical Transactions, Vol. I. Dr Heberden gives a very accurate account of the symptoms produced by the *ascarides*, from an eminent physician who was troubled with them all his life. They brought on an uneasiness in the rectum, and an almost intolerable itching in the anus; which sensations most usually came on in the evening, and prevented sleep for several hours. They were attended with heat, sometimes so considerable as to produce a swelling in the rectum both internally and externally; and if these symptoms were not soon relieved, a tenesmus was brought on, with a mucous dejection. Sometimes there was a gripping pain in the lower part of the abdomen, a little above the *os pubis*. If this pain was very severe, a bloody mucus followed, in which there were often found *ascarides* alive. They were also sometimes suspected of occasioning disturbed sleep, and some degree of head-ach.

On this case Dr Heberden observes, that the general health of the patient did not seem to have suffered from the long continuance of the disease, nor the immediate inconveniences of the disorder itself to have

increased. "It is (says he) perhaps universally true, that this kind of worms, though as difficult to be cured as any, yet is the least dangerous of all. They have been known to accompany a person through the whole of a long life, without any reason to suspect that they had hastened its end. As in this case there was no remarkable sickness, indigestion, giddiness, pain of the stomach, nor itching of the nose, possibly these symptoms, where they have happened to be joined with the *ascarides*, did not properly belong to them, but arose from some other causes. There is indeed no one sign of these worms, but what in some patients will be wanting."

The abovementioned patient used purging and irritating clysters with very little success. One drachm and an half of tobacco was infused in six ounces of boiling water; and the strained liquor being given as a clyster, occasioned a violent pain in the lower part of the abdomen, with faintness and a cold sweat: this injection, though retained only one minute, acted as a smart purge, but did little or no good. Lime-water was also used as a clyster; which brought on a costiveness, but had no good effect. Six grains of salt of steel were dissolved in six ounces of water, and injected. This clyster in a few minutes occasioned an aching in the rectum, griped a little without purging, and excited a tenesmus. Some few *ascarides* were brought off with it; but all of them were alive. The uneasy sensation in the rectum did not abate till some warm milk was thrown up. Whenever the tenesmus or mucus stools were thought worth the taking notice of, warm milk and oil generally gave immediate relief. If purging was necessary, the lenient purges, such as manna with oil, were, in this particular case, made use of: rhubarb was found too stimulating.—But, in general, the most useful purge, and which therefore was most usually taken, was cinnabar and rhubarb, of each half a drachm: this powder seldom failed to bring away a mucus as transparent as the white of an egg, and in this many *ascarides* were moving about. The cinnabar frequently adhered to this mucus, which did not come off in large quantities, when a purge was taken without cinnabar. Calomel did no more than any other purge which operates briskly would have done; that is, it brought away *ascarides*, with a great deal of mucus. Oil given as a clyster sometimes brought off these animalcules: the oil swam on the surface of the mucus, and the *ascarides* were alive and moving in the mucus itself, which probably hindered the oil from coming in contact with them and killing them.

The Doctor also observes, that mucus or slime is the proper nest of the *ascarides*, in which they live, and is perhaps the food by which they are nourished; and it is this mucus which preserves them unhurt, though surrounded with many other liquors, the immediate touch of which would be fatal. It is hard to satisfy ourselves by what instinct they find it out in the human body, and by what means they get at it; but it is observable in many other parts of nature, as well as here, that where there is a fit soil for the hatching and growth of animals and vegetables, nature has taken sufficient care that their seeds should find the way thither. Worms are said to have been found in the intestines of infants born dead. Purges, by

Worms. by lessening this slime, never fail to relieve the patient: and it is not unlikely, that the worms which are not forced away by this quickened motion of the intestines, may, for want of a proper quantity of it, languish, and at last die; for if the ascarides are taken out of their mucus, and exposed to the open air, they become motionless, and apparently die in a very short time. Dr Heberden supposes that the kind of purge made use of is of some consequence in the cure of all other worms as well as ascarides; the animals being always defended by the mucus from the immediate action of medicines; and that therefore those purges are the best which act briskly, and of which a repetition can be most easily borne. Purging waters are of this sort, and jalap especially for children; two or more grains of which, mixed with sugar, are most easily taken, and may be repeated daily.

From the case above-mentioned, and from Dr Heberden's observations, we may easily see why it is so difficult to destroy these animals; and why anthelmintics, greatly celebrated for some cures, are yet so far from being specifics in the disease. As the worms which reside in the cavities of the human body are never exposed to the air, by which all living creatures are invigorated, it is evident, that in themselves they must be the most tender and easily destructible creatures imaginable, and much less will be requisite to kill them than any of our common insects. The most pernicious substances to any of the common insects are oil, caustic fixed alkali, lime, and lime-water. The oil operates upon them by shutting up the pores of their bodies; the lime-water, lime, and caustic alkali, by dissolving their very substance. In the case of intestinal worms, however, the oil can have very little effect upon them, as they are defended from it by the moisture and mucus of the intestines; the like happens with lime-water: and therefore it is necessary that the medicine should be of such a nature as to destroy both mucus and insects together; for which purpose the caustic fixed alkali is at once safe and efficacious; nor is it probable that any case of worms whatever could resist the proper use of this medicine. A very large dose of any salt indeed will also destroy the mucus and destroy the worms; but it is apt to inflame and excoriate the stomach and intestines, and thus to produce worse distempers than that which it was intended to cure. Dr Heberden gives the following remarkable case of a patient cured of worms by enormous doses of common salt, after trying many other remedies in vain. In February 1757, the patient was seized with uncommon pains in his stomach, attended with nausea, vomiting, and constipation of bowels, and an almost total loss of sleep and appetite: He soon became much emaciated, and could neither stand nor walk upright; his belly grew small and hard, and closely retracted, insomuch that the sternum covered the navel, and the latter could scarce be discovered or felt by the finger: his urine was always milky, and soon deposited a thick white sediment; his excrements were very hard and lumpy, resembling those of sheep, only of a brown colour; nor had he ever a stool without some medicine or other to procure it. In this situation he continued four years; during which time he had been in an infirmary, attended by eminent physicians, but was dismissed as in-

curable. At last he was advised by a neighbour to drink salt and water, as he said he knew one cured by it who had for many years been afflicted with the same kind of pains in the belly and stomach. As his distemper was now almost insupportable, he willingly tried the experiment. Two pounds of common salt were dissolved in as little water as possible, all which he drank in less than an hour. Soon afterwards he found himself greatly oppressed at the stomach, grew extremely sick, and vomited violently; on the fourth straining he brought up about half a pint of small worms, part ascarides, and the rest resembling those worms which are called the *botts*, and frequently met with in the stomach of horses, but much smaller, and about the size of a grain of wheat. The salt soon began to operate downwards, and he had five or six very copious fetid stools, tinged with blood; and in them discharged near an equal quantity of the same kind of worms he had vomited. Being greatly fatigued with the violence of the operations, he fell into a calm sleep, which lasted two hours, during which he sweated profusely, and awoke much refreshed. Instead of his usual pains, he now only complained of a rawness and soreness of his gullet, stomach, and bowels, with an almost unquenchable thirst; to allay which, he drank large quantities of cold water, whey, butter-milk, or whatever he could get. The urine he now passed was small in quantity, and rendered with very great difficulty, being highly saturated with the salt, from whence arose a most troublesome dysuria and strangury. However, these symptoms gradually abated by a free use of the liquors above-mentioned; and on the third morning he was so well recovered, that he took two pounds more of salt, dissolved in the like quantity of water. The effects were nearly similar to the former; only that most of the worms were now burst, and came away with a considerable quantity of slime and mucus. The drought, strangury, &c. returned with their former violence, but soon yielded to the old treatment. He sweated very copiously for three days, slept easily, and by that time could extend his body freely: on the fifth day he left his bed, and, though very weak, could walk upright; his strength and appetite soon returned, and he became robust and well.

The anthelmintic medicines which have been recommended by one person or other, are in a manner innumerable; but the principal are,

1. *Quicksilver*. This is very efficacious against all kinds of worms, either taken in the form of calomel or corrosive sublimate. Even the crude metal boiled in water and the water drunk, has been recommended as an almost certain cure. But this, it is evident, can receive no impregnation from the mercury. If, therefore, it have any effect, it must be from some foreign and accidental impregnation. In most instances there can be no objection to mercury, but only that it is not endowed with any attenuating quality whereby the mucus in which these insects reside can be dissolved. It therefore fails in many cases, though it will most certainly destroy worms where it can get at them.

2. *Powder of tin*. This was for some time celebrated as a specific, and indeed we may reasonably expect good effects from it; as by its weight and grittiness

Worms

grittiness it rubs off the mucus and worms it contains from the coats of the intestinal canal, in which case they are easily evacuated by purgatives. In order to produce any considerable effects, it must be given in a large dose.

3. *Geoffræa inermis*, or *cabbage bark*. This remedy is used by the inhabitants of Jamaica. The first account of it which appeared in this country was published in the *Physical and Literary Essays*, vol. ii. by Mr Duguid surgeon in that island. He acquaints us, that the inhabitants of Jamaica, young and old, white and black, are much infested with worms, especially the long round sort; the reason of which, he thinks, is the quantity of sweet viscid vegetables which they eat. On dissecting a child of seven months old, who died of vomiting and convulsions, twelve large worms were found; one of them filled the *appendix vermiformis*, and three of them were entwisted in such a manner as to block up the *valvula Tulpii*, so that nothing could pass from the small to the great guts.—The cabbage-bark, however, he tells us, is a safe and effectual remedy, and the most powerful vermifuge yet known; and that it frequently brings away as many worms by stool as would fill a large hat. He owns that it has sometimes violent effects; but this he ascribes to the negroes who make the decoction (in which form the bark is used), and not to the remedy itself.

Mr Anderson, surgeon in Edinburgh, has also given an account of this bark and its operation, in a letter to Dr Duncan, published in the *Edinburgh Medical Commentaries*, volume iv. p. 84. From this account it appears, that there are two different kinds of bark; the one much paler than the other: the pale kind operates much more violently than the other. It often occasions loose stools, great nausea, and such like symptoms, attended with great uneasiness in the belly: in one or two instances it was suspected of inducing syncope. The darker coloured kind resembles the *cassia lignea*, though it is of a much coarser texture. This kind, Mr Anderson thinks, may be exhibited in any case where an anthelmintic is necessary; the dangerous symptoms might have followed either from the use of the first kind, or from an over-dose of the second. The usual method of preparing the medicine is by boiling two ounces and a half of the bark in two quarts of water to a pint and a half. Of this a tea-spoonful may be given at first in the morning, gradually increasing the quantity till we come to four or five table-spoonfuls in a day. When exhibited in this manner, Mr Anderson informs us, that he never saw it produce any violent symptoms, and has experienced the best effects from it as an anthelmintic. After the use of this decoction for eight or nine mornings successively, a dose of jalap with calomel must be given, which seldom fails to bring away the worms, some dead, some alive. If at any time the decoction produce more than one or two loose stools, a few drops of liquid laudanum may

be given; and, in general, Mr Anderson gave 15 or 20 drops of the spirit of lavender with each dose.

In a letter from Dr Rush, professor of chemistry at Philadelphia, to Dr Duncan of Edinburgh, the following account is given of another preparation of this medicine. "It has long (says he) been a complaint among physicians, that we have no *vermifuge* medicine which can be depended upon. Even calomel fails in many cases where there are the most pathognomonic signs of worms in the bowels. But this complaint, it is hoped, is now at an end. The physicians of Jamaica have lately found, that the *cabbage-bark*, as it is called in the West Indies, made into a syrup with brown sugar, is an infallible antidote to them. I have used above 30 pounds of it, and have never found it fail in one instance. The syrup is pleasant; it sometimes pukes, and always purges, the first or second time it is given."

Notwithstanding these encomiums, however, the cabbage-bark (A) hath not come into general use in Britain. But diseases from the *teretes*, or *lumbri* as they are often called, the species of worm against which this bark is employed, much less frequently occur than in some other countries. When they do occur, in almost every instance they readily yield to more gentle and safe anthelmintics; and the worms may not only be expelled by calomel, but by the vegetable bitters; as the powder of the *semen fantonicum*, or the like.

4. *Coubage*, or *cow-itch*. This is the *Dolichos urens* or *pruriens* of Linnæus; and the principles on which it acts have been already explained under the article *DOLICHOS*. It is somewhat similar to the powder of tin, but bids fair for being more efficacious. It might at first appear to occur as objections to this medicine, that by the hairs of it entangling themselves with one another, calculi might be formed in the intestines, or obstructions equally bad; or if the sharp points and hooks with which it abounds were to adhere to the nervous coats of the intestines themselves, they might occasion a fatal irritation, which could not be removed by any means whatever. But from the experience of those who have employed it extensively in practice, it would appear, that these objections are entirely theoretical; and that it may be employed with perfect safety. The spiculæ, gently scraped off from a single pod, and mixed with syrup or melasses, are taken for a dose in the morning fasting. It is repeated in this manner for two or three days without any sensible operation; but even a very slight purgative taken afterwards has been found to discharge an almost incredible quantity of worms. And according to Dr Bancroft, who has given a very particular account of its use in his *Natural History of Guaiana*, it is one of the safest and most certain anthelmintics yet discovered; but, as well as the bark of the *Geoffræa*, it has hitherto been very little used in Britain, probably from its not being necessary.

5. *Indian pink*. This plant, which in the *Spigelia marilandica*

(A) The most accurate account of this vegetable, and its effects, has been given by Dr Wright in the *Philosophical Transactions*, of which the reader will find a short view under the article *Geoffræa*, in the order of the alphabet.

Worms.

Worms. *marilandica* of Linnæus, is also an American plant, and was first recommended in the Edinburgh Physical and Literary Essays by Dr Garden of Charlestown in South Carolina. He is of opinion that a vomit ought always to precede the use of it; and informs us, that half a drachm of it purges as briskly as the same quantity of rhubarb. At other times he has known it produce no effect on the belly though given in very large quantity: In such cases it becomes necessary to add a grain or two of sweet mercury, or some grains of rhubarb; but then it is less efficacious than when it proves purgative without addition. The use of it, however, in small doses, is by no means safe; as it frequently produces giddiness, dimness of sight, convulsions, &c. The addition of a purgative, indeed, prevents these effects; but at the same time, as already observed, it diminishes the virtue of the medicine. The Doctor therefore recommends large doses, as from them he never knew any other effect than the medicine's proving emetic or violently cathartic. The dose is from 12 to 60 or 70 grains of the root in substance, or two, three, or four drachms of the infusion, twice a-day.

This medicine has also had its day, and is now very far from being considered as a specific. From what has been already observed, it must pretty clearly appear, that powder of tin, cow-itch, or fixed alkaline salts, bid fairest for destroying worms in all the variety of cases in which they can occur. Alkalies indeed have been but little tried. We have known one case in which all the complaints have been removed by a single dose: we have also an instance of their efficacy, in an extraordinary case of a worm bred in the liver, mentioned in the 2d volume of the Medical Observations. The patient had a violent pain in the side, and sometimes in the shoulder, as the worm shifted its place; but, on the application of a lixivial poultice, the pain went out of the side entirely, and kept in the shoulder for some weeks.

The long round worms seem to be the most dangerous which infest the human body, as they often pierce through the stomach and intestines, and thus bring on a miserable death. The common symptoms of them are nausea, vomiting, looseness, fainting, slender intermitting pulse, itching of the nose, and epileptic fits. By the consumption of the chyle they produce hunger, paleness, weakness, costiveness, tumor of the abdomen, eructations, and rumbling of the intestines; but it is from the perforation of the intestines that the disease proves so frequently fatal. A child may be known to have worms from his cold temperament, paleness of the countenance, livid eye-lids, hollow eyes, itching of the nose, voracity, startings, and grinding of the teeth in sleep; and more especially by a very fetid breath. Very frequently, however, they are voided by the mouth and anus, in which case there is no room for doubt. In the Medical Commentaries, vol. II. we have an account of the intestines being perforated by a worm, and yet the patient recovered. The patient was a woman troubled with an inflammation in the lower part of the abdomen. The pain was so violent, that for six days she slept none at all; the tumor then broke, discharged upwards of a pound of thin watery sanies, immediately

after which the excrements followed. The next day she was extremely low; her pulse could scarcely be felt; the extremities were cold; and there was a considerable discharge from the wound, which had already begun to mortify. She got a decoction of the bark with wine, which alleviated the symptoms; but in removing the mortified parts a worm was found among them nine inches long, and as thick as an eagle's quill. By proper applications, the discharge of excrements ceased, and she recovered perfect health. She was sensible of no accident giving rise to the inflammation; so that in all probability it arose entirely from the worm itself.

The *tania*, or *tape-worm*, as it is called, is one of those most difficult to be removed from the human body. It is of two kinds, *tania solium* and *tania lata*; for a description of which see the article *TANIA*.—The reason of its being so difficult to cure, is, that though portions of it are apt to break off and be discharged, it is endowed with a power of reproduction, so that the patient is little or nothing better. The symptoms occasioned by it are not different from those above described. A specific against the *tania lata* hath been lately so much celebrated in France, that the king thought proper to purchase it from the proprietor (Madam Nouffer), and the account of it has been translated into English by Dr Simmons. The patients are required to observe no particular regimen till the day before they take the specific. That day they are to take nothing after dinner till about 7 o'clock; after which, they are to take the following soup: "Take a pint and an half of water, two or three ounces of good fresh-butter, and two ounces of bread cut into thin slices: add to this salt enough to season it, and then boil it to the consistence of panada." About a quarter of an hour after this, they take a biscuit and a glass of white-wine, either pure or mixed with water; or even water alone, if they have not been accustomed to wine. If the patient has not been to stool that day, (which, however, is not usual with patients in this way), the following clyster is to be injected. "Take a small quantity of the leaves of mallows, and boil them in a sufficient quantity of water, mixing with it a little salt, and when strained off add two ounces of oil olive." Next morning, about eight or nine hours after the supper above mentioned, the specific is to be taken. This is no other than two or three drachms of the root of male fern, *polypodium filix mas* of Linnæus, gathered in autumn, and reduced to fine powder. It is to be taken in any distilled water, or in common water. This medicine is apt to occasion a nausea: to avoid which, Madam Nouffer allows her patients to chew any thing that is agreeable, but forbids any thing to be swallowed; or they may smell to vinegar, to check the sickness: but if, notwithstanding this, the specific be thrown up, a fresh dose must be swallowed as soon as the sickness is gone off, and then they must try to sleep. About two hours after this the following bolus is to be taken. "Take of the panacea of mercury 14 times sublimed, and select resin of scammony, each ten grains; of fresh and good gambooge, six or seven grains: reduce each of these substances separately into powder, and then mix them with some conserve into a bolus." This composition is to be swallowed at two different times, washing it down with

Worms.

Worms.

with one or two dishes of weak green-tea, after which the patient must walk about his chamber. When the bolus begins to operate, he is to take a dish of the same tea occasionally, until the worm be expelled; then, and not before, Madame Nouffer gives him broth or soup, and he is directed to dine as is usual after taking physic. After dinner he may either lie down or walk out, taking care to conduct himself discreetly, to eat but little supper, and to avoid every thing that is not of easy digestion.

The cure then is complete; but it is not always effected with the same quickness in every subject. He who has not kept down the whole bolus, or who is not sufficiently purged by it, ought to take, four hours after it, from two to eight drachms of Epsom salt dissolved in boiling water. The dose of this salt may be varied according to the temperament and other circumstances of the patient.

If the worm should not come away in a bundle, but in the form of a thread (which particularly happens when the worm is involved in much tenacious mucus), the patient must continue to sit upon the close stool without attempting to draw it away, drinking at the same time warm weak tea: sometimes this alone is not sufficient, and the patient is obliged to take another dose of purging salt, but without varying his position till the worm be wholly expelled.

It is unusual for patients who have kept down both the specific and purging dose, not to discharge the worm before dinner-time. This, however, sometimes happens when the dead worm remains in large bundles in the intestines, so that the fæces becoming more limpid towards the end of the purging, pass by it without drawing it with them. The patient may in this case eat his dinner; and it has been observed, that the food, joined to the use of a clyster, has brought about the expulsion of the worm.

Sometimes the worm is brought away by the action of the specific alone, before the patient has taken the purging bolus: when this happens, Madame Nouffer gives only two-thirds of it, or substitutes the salt in its stead.

Patients must not be alarmed by any sensation of heat or uneasiness they may feel during the action of the remedy, either before or after a copious evacuation, or just as they are about to void the worm. These sensations are transitory, and go off of their own accord, or by the assistance of the vapour of vinegar drawn in at the nose.

They who have vomited both the specific and bolus, or who have kept down only a part of them, sometimes do not void the worm that day. Madame Nouffer therefore directs them to take again that night the soup, the wine and biscuit; and if circumstances require it, the clyster. If the worm do not come away during the night, she gives them early the next morning another dose of the specific, and, two hours afterwards, six drachms or an ounce of purging salt, repeating the whole process of the preceding day; excepting the bolus, which she suppresses.

She observes, that very hot weather diminishes in some degree the action of her remedy; she therefore prefers the month of September for administering it; but as she has not been always able to choose the season, and has been sometimes obliged to undertake the

N^o 209.

Worms.

cure of patients in the hottest days of summer, she then gave her specific very early in the morning; and with this precaution she saw no difference in its effects.

On the day appointed for the trial of this medicine before the commissioners nominated by the king of France, it was exhibited to five different persons; but only one of them was certainly known to have the *tænia lata* by having discharged parts of it before. That person was cured; the second voided a portion of the *tænia folium*; the third some *ascarides*, with a part of the *tænia folium*; the fourth and fifth voided no worms; but the last considered much of the viscid slime he voided to be worms in a dissolved state.

This trial was thought sufficient to ascertain the efficacy of the medicine, and further trials were made by those to whom the secret was communicated. The first voided two *tænia*, after much vomiting and 18 or 20 stools; the second had no vomiting, but was as violently purged, and discharged two worms; the third had 20 copious stools during the night, and discharged the worm in the morning; and the fifth was effected in much the same manner. Some others who were not relieved, were supposed not to have a *tænia*.

This specific, however, is not to be considered as a new discovery; the efficacy of fern in cases of *tænia* having been known long ago. Theophrastus prescribes its root, in doses of four drams, given in water sweetened with honey, as useful in expelling flat worms.—Dioscorides orders it in the same dose, and adds, that its effects are more certain when it is mixed with four oboli (40 grains) of scammony or black hellebore; he particularly requires that garlic should be taken before hand. Pliny, Galen, Oribasius, and Aëtius, ascribe this same virtue to fern; and are followed in this by Avicenna, and the other Arabian physicians. Dorstenius, Valerius Cordus, Dodonæus, Mathiolus, Dalechampius, who commented on Dioscorides, or copied him in many things, all mention the fern-root as a specific against the *tænia*. Sennertus, and Burnet after him, recommended in similar cases an infusion of this plant, or a dram of its powder for young persons, and three drams for adults. Simon Paulus, quoted by Ray and Geoffroy, considers it as the most efficacious of all poisons against the flat worm, and as being the basis of all the secret remedies extolled by empirics in that disease. Andry (*général. des Vers*, p. 246, 249) prefers distilled fern-water to the root in powder, or he employs it only in the form of an opiate, or mixed with other substances.

These are not the only authors who have mentioned the *tænia*; many others have described this worm, the symptoms it excites, and the treatment proper to expel it. Almost all of them mention the fern-root, but at the same time they point out other remedies as possessing equal efficacy. Amongst these we find the bark of the root of the mulberry-tree, the juice of the *auricula murus*, the roots of *chamæleon niger*, ginger, zedoary; decoctions of mugwort, southernwood, wormwood, penny-royal, origanum, hyssop, and in general of all bitter and aromatic plants, &c. Some of them direct the specific to be simply mixed and taken in wine or honey and water; others join to it the use of some purgative remedy, which they say adds to its efficacy. Oribasius, Sylvius, &c. distinguish the specific

Worms.

cific that kills the worm, from the purgative that evacuates it, and direct them to be given at different times. Sennertus gives a very satisfactory reason for adopting this method. If we give, says he, the purgative medicine and the specific at the same time, the latter will be hastily carried off before it can have exerted its powers on the worm: whereas, if we give the specific first, and thus weaken the worm, it will collect itself into a bundle, and, being brought away by means of the purge, the patient will be cured. The cure will be more speedy if the *primæ viæ* have been previously lubricated. These precautions are all of them essential to the success of the remedy, nor are they neglected by Madame Nouffer in her method of treatment. The panada and injection she prescribes the night before, to lubricate the intestines, and prepare the *primæ viæ*. The fern-root, taken in the morning, kills and detaches the worm: of this the patients are sensible by the cessation of the pain in the stomach, and by the weight that is felt in the lower belly. The purgative bolus administered two hours after this, procures a complete evacuation; it is composed of substances that are at once purgative and vermifuge, and which, even when administered alone, by different physicians, sometimes succeeded in expelling the worm. If this purgative appear to be too strong, the reader is desired to recollect, that it produced no ill effects in either of the cases that came under the observation of the physicians appointed to make the trials; and that in one of those cases, by diminishing the dose, they evidently retarded the evacuations.—Regard however, they observe, is to be had both to the age and the temperament of the patient, and the treatment should always be directed by a prudent and experienced physician, who may know how to vary the proportions of the dose as circumstances may require. If the purgative be not of sufficient strength, the worm, after being detached by the specific, remains too long a time in the intestines, and becoming soon corrupted is brought away only in detached portions: on the other hand, if the purgative be too strong, it occasions too much irritation, and evacuations that cannot fail to be inconvenient.

Madame Nouffer's long experience has taught her to distinguish all these circumstances with singular adroitness.

This method of cure is, as we have seen, copied in a great measure from the ancients: it may be possible to produce the same effects by varying the remedies; but the manner of applying them is by no means indifferent: we shall be always more certain of success, if the intestines be previously evacuated, and if the specific be given some time before the purgative bolus. It is to this method that Madame Nouffer's constant success is attributed.

Her remedy has likewise some power over the *tania folium*; but as the rings of this worm separate from each other more easily than those of the *tania lata*, it is almost impossible for it to be expelled entire. It will be necessary therefore to repeat the treatment several times, till the patient cease to void any portions of worms. It must likewise be repeated, if, after the expulsion of one *tania folium*, another should be generated in the intestinal canal. This last case is so rare, that it has been supposed that no person can have

Vol. XI. Part I.

more than one of these worms; and for this reason it has been named *solitary worm*, which, being once removed, could never be renewed or replaced by a second: but experience has proved, that this notion is an ill-founded prejudice, and we know that sometimes these worms succeed each other, and that sometimes many of them exist together. Two living *tæniæ* have frequently been expelled from the same patient. Dr de-Haen (*Rat. Méd. tom. viii. p. 157.*) relates an instance of a woman who voided 18 *tæniæ* at once. In these cases the symptoms are usually more alarming; and the appetite becomes excessive, because these worms derive all their nourishment from the chyle. If too austere and ill judged a regimen deprives them of this, they may be expected to attack even the membranes of the intestines themselves. This evil is to be avoided by eating frequently.

Such are the precautions indicated in this disease. The ordinary vermifuge remedies commonly procured only a palliative cure, perhaps because they were too often improperly administered. But the efficacy of the present remedy, in the opinion of the French physicians, seem to be sufficiently confirmed by experience. To the above account, however, it seems proper to subjoin the following observations by Dr Simmons.

“A Swiss physician, of the name of *Herrenschwand*, more than 20 years ago, acquired no little celebrity by distributing a composition of which he styled himself the *inventor*, and which was probably of the same nature as Madame Nouffer's. Several very eminent men, as Tronchin, Hovius, Bonnet, Cramer, and others, have written concerning the effects of this remedy. It seems that Dr Herrenschwand used to give a powder by way of preparation, the night before he administered his specific. Nothing could be said with certainty concerning the composition either of one or the other. The treatment was said sometimes to produce most violent effects, and to leave the patients in a valetudinary state. Dr De Haen was dissuaded by his friends from using it, because it disordered the patients too much. It will be readily conceived, now that we are acquainted with Madame Nouffer's method, that these effects were occasioned wholly by the purgative bolus. It is not strange, that resin of scammony or jalap, combined with *mercurius dulcis* and gamboge, all of them in strong doses, should in many subjects occasion the greatest disorders. It seems likely, however, that much of the success of the remedy depends on the use of a drastic purge. Some of the ancients who were acquainted with the virtues of the fern-root, observed that its efficacy was increased by scammony. Resinous purges, especially when combined with mercury, have often been given with success in cases of *tania*. Dr De Haen saw a worm of this sort five ells long expelled by the resin of jalap alone. Dr Gaubius knew a woman who had taken a variety of anthelmintic remedies without any effect, though she had voided a portion of *tania* an ell and a half long previous to the use of these medicines: but at length, after taking a purge of singular strength, she voided the worm entire. Many other instances of the same kind are to be met with in authors. Other remedies have occasionally been given with success. In Sweden, it has been a practice to drink several

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Worms.

Worms.

gallons of cold water, and then to take some drastic purge. Boerhaave says, that he himself saw a *tenia* measuring 300 ells expelled from a Russian by means of the *vitriolum martis*. All these methods, however, have been too often ineffectual."

From some late accounts, there is reason to believe that Dr Herrenschwand's remedy for *tenia* does not so exactly agree with that of Madame Nouffer as Dr Simmons seems to imagine. According to the account given us by a gentleman who had his information from Dr Herrenschwand himself, it consists entirely of gamboge and fixed vegetable alkali.

408

Of POISONS.

THESE have all been treated of already, except the bites and stings of serpents, scorpions, &c. According to Dr Mead, the symptoms which follow the bite of a viper are, an acute pain in the place wounded, with a swelling, at first red, but afterwards livid, which by degrees spreads farther to the neighbouring parts; with great faintness, and a quick, low, and sometimes interrupted pulse; great sickness at stomach, with bilious convulsive vomitings, cold sweats, and sometimes pains about the navel. Frequently a sanious liquor runs from the small wound, and little pustules are raised about it: the colour of the whole skin in less than an hour is changed yellow, as if the patient had the jaundice. These symptoms are very frequently followed by death, especially if the climate be hot, and the animal of a large size. This is not, however, the case with all kinds of serpents. Some, we are assured, kill by a fatal sleep; others are said to produce an universal hemorrhagy and dissolution of the blood; and others an unquenchable thirst. But of all the species of serpents hitherto known, there is none whose bite is more expeditiously fatal than that of the rattlesnake. Dr Mead tells us, that the bite of a large serpent of this kind killed a dog in a quarter of a minute; and to the human species they are almost equally fatal. Of this serpent it is said, that the bite makes the person's skin become spotted all over like the skin of the serpent; and that it has such a motion as if there were innumerable living serpents below it. But this is probably nothing more than a dissolution of the blood, by which the skin becomes spotted as in petechial fevers, at the same time that the muscles may be convulsed as in the distemper called *hieranosos*, which was formerly thought to be the effect of evil spirits: but it is even not improbable that observers have been somewhat aided by fancy and superstition when they thought that they detected such appearances.

It has justly appeared surprising to philosophers, how such an inconsiderable quantity of matter as the poison emitted by a viper at the time of biting should produce such violent effects. But all inquiries into this matter must necessarily be uncertain; neither can they contribute any thing towards the cure. It is certain that the poison produces a gangrenous disposition of the part itself, and likewise seemingly of the rest of the body; and that the original quantity of poison continues some time before it exerts all its power on the patient, as it is known that removing part of the poisonous matter by suction will alleviate the symptoms. The indications of cure then are three. 1. To remove the poisonous matter from the body: Or, 2. If

this cannot be done, to change its destructive nature by some powerful and penetrating application to the wound: And, 3. To counteract the effects of that portion already received into the system.

The poisonous matter can only be removed from the body by sucking the wound either by the mouth, or by means of a cupping-glass; but the former is probably the more efficacious, as the saliva will in some measure dilute and perhaps obtund the poison. Mead directs the person who sucks the wound to hold warm oil in his mouth, to prevent inflammation of the lips and tongue: but as bites of this kind are most likely to happen in the fields, and at a distance from houses, the want of oil ought by no means to retard the operation, as the delay of a few minutes might prove of the most fatal consequence; and it appears from Dr Mead's experiments, that the taking the poison of a viper into the mouth undiluted, is attended with no worse consequences than that of raising a slight inflammation. A quick excision of the part might also be of very great service.

The only way of answering the second indication is, by destroying the poisoned part by a red-hot iron, or the application of alkaline salts, which have the power of immediately altering the texture of all animal-substances to which they are applied, provided they are not covered by the skin; and as long as the poison is not totally absorbed into the system, these must certainly be of use.

To answer the third indication, Dr Mead recommends a vomit of ipecacuanha, encouraged in the working with oil and warm water. The good effects of this, he says, are owing to the shake which it gives to the nerves, whereby the irregular spasms into which their whole system might be drawn are prevented. After this the patient must go to bed, and a sweat must be procured by cordial medicines; by which the remaining effects of the poison will be carried off.

It has been confidently asserted by many, that the American Indians are possessed of some specific remedy by which they can easily cure the bite of a rattlesnake. But Mr Catesby, who must have had many opportunities of knowing this, positively denies that they have any such medicine. They make applications indeed, and sometimes the patient recovers; but these recoveries he ascribes to the strength of nature overcoming the poison, more than to the remedies made use of. He says, they are very acute in their prognostics whether a person that is bit will die or not; and when they happen to receive a bite in certain parts of the body, when the teeth of the animal enter a large vein, for instance, they quietly resign themselves to their fate, without attempting any thing for their own relief. Indeed, so violent and quick is the operation of this poison, that unless the antidote be instantly applied, the person will die before he can get to a house. It would seem therefore eligible for those who are in danger of such bites, to carry along with them some strong alkaline ley, or dry alkaline salt, or both, which could be instantly clapt on the wound, and by its dissolving power would destroy both the poison and the infected parts. Strong cordials also, such as ardent spirits, volatile alkali, &c. might possibly excite the languid powers of nature, and enable her to expel

Poisons. expel the enemy, which would otherwise prove too powerful. This seems to be somewhat confirmed from the account we have in the Philosophical Transactions of a gentleman bit by a rattle-snake, who was more relieved by a poultice of vinegar and vine-ashes put to his wound than any thing else. The vine-ashes being of an alkaline nature, must have saturated the vinegar, so that no part of the cure could be attributed to it: on the other hand, the ashes themselves could not have been saturated by the small quantity of acid necessary to form them into a poultice; of consequence they must have operated by their alkaline quality.— Soap-ley, therefore, or very strong salt of tartar, may reasonably be thought to be the best external application, not only for the bites of vipers, but of every venomous creature; and in fact we find *dry salt* universally recommended both in the bites of serpents and of mad dogs. Dr Mead recommends the fat of vipers presently rubbed into the wound; but owns that it is not safe to trust to this remedy alone.

Some years ago the volatile alkali was strongly recommended by M. Sage of the French academy, as a powerful remedy against the bite of the viper: and, by a letter from a gentleman in Bengal to Dr Wright, it would appear that this article, under the form of the *eau de luce*, which is very little if any thing different from the *spiritus ammonia succinatus* of the London Pharmacopoeia, has been employed with very great success against this affection in the East Indies: but from the trials made with it by the Abbé Fontana, published in his Treatise on the Poison of the Viper, it would appear that it by no means answered his expectation; and the efficacy of this, as well as of the snake pills mentioned under the article HYDROPHOBIA, still requires to be confirmed by further experience.

M E L Æ N E.

THIS is a distemper not very common, but it has been observed by the ancient physicians, and is described by Hippocrates under the name of *morbus niger*. It shows itself by a vomiting and purging of black tar-like matter; which Hippocrates, Boerhaave, and Van Swieten, supposed to be occasioned by atra bilis. But Dr Home, in his Clinical Experiments, shows that it is owing to an effusion of blood from the meseraic vessels, which by its stagnation and corruption assumes that strange appearance. The disease, he says, frequently follows hæmorrhagy; and those of a scorbutic habit are most subject to it. It is an acute disease, and terminates soon; yet is not attended with any great degree of fever. In one of Dr Home's patients the crisis happened on the eighth day by diarrhœa; in another, on the 14th, by sweat and urine; and a third had no evident critical evacuation.

As to the cure, Dr Home observes, that bleeding is always necessary where the pulse can bear it; nor are we to be deterred from it by a little weakness of the pulse, more than in the enteritis. Emetics are hurtful, but purgatives are useful. But the most powerful medicine for checking this hæmorrhagy is the vitriolic acid: and, that this might be given in greater quantity, he mixed it with mucilage of gum arabic; by which means he was enabled to give double the quantity he could otherwise have done. The cold

bath was tried in one instance, but he could not determine whether it was of any service or not. The cure was completed by exercise and the bark.

Of the DISEASES of CHILDREN.

410

Dr Buchan observes, that from the annual registers of the dead it appears, that about one half of the children born in Great Britain die under twelve years of age; and this very great mortality he attributes in a great measure to wrong management. The particulars of this wrong management enumerated by him are,

1. Mothers not suckling their own children. This, he owns, it is sometimes impossible for them to do; but where it can be done, he affirms that it ought never to be omitted. This, he says, would prevent the unnatural custom of mothers leaving their own children to suckle those of others; on which he passes a most severe censure, and indeed scarce any censure can be severe enough upon such inhumanity. Dr Buchan informs us, "He is sure he speaks within bounds, when he says not one in a hundred of these children live who are thus abandoned by their mothers." For this reason he adds, that no mother should be allowed to suckle another's child till her own be fit to be weaned. A regulation of this kind would save many lives among the poorer sort, and would do no harm to the rich; as most women who make good nurses are able to suckle two children in succession upon the same milk.

2. Another source of the diseases of children is the unhealthiness of parents: and our author insists that no person who labours under an incurable malady ought to marry.

3. The manner of clothing children tends to produce diseases. All that is necessary here, he says, is to wrap the child in a soft loose covering; and the softness of every part of the infant's body sufficiently shows the injury which must necessarily ensue by pursuing a contrary method.

4. A new-born infant, instead of being treated with syrups, oils, &c. ought to be allowed to suck the mother's milk almost as soon as it comes into the world. He condemns the practice of giving wines and spirituous liquors along with the food soon after birth; and says, that if the mother or nurse has a sufficient quantity of milk, the child will need little or no other food before the third or fourth month. But to this it may reasonably be objected, not only that the nursing would thus be very severe on the mother; but if the child be left thus long without food, it will not easily relish it for some time, and its stomach is apt to be easily hurt by a slight change of diet after it has been long accustomed to one thing. Neither can it be shown, that the strongest and most healthy infants are those which get no other food but the mother's milk during the first months of their life. In fact, children are evidently of a weak and lax habit of body, so that many of their diseases must arise from that cause; all directions which indiscriminately advise an antiphlogistic regimen for infants as soon as they come into the world, must of necessity be wrong. Many instances in fact might be brought to show, that by the preposterous method of starving infants, and at the same time treating them with vomits and purges, they are

Diseases of
Children.

often hurried out of the world. Animal-food indeed is excessively agreeable to children, and they ought to be indulged with it in moderation; and this will prove a much better remedy for those acidities with which children are often troubled, than magnesia alba, crab's eyes, or other absorbents, which have the most pernicious effects on the stomachs of these tender creatures, and pall the appetite to a surprising degree. The natural appetites of children are indeed the best rule by which we can judge of what is proper or improper for them. They must no doubt be regulated as to the quantity; but we may be assured that what a child is very fond of will not hurt it if taken in moderation. When children are sick, they refuse every thing but the breast; and if their distemper be very severe, they will refuse it also; and in this case they ought not to be pressed to take food of any kind: but when the sickness goes off, their appetite also returns, and they will require the usual quantity of food.

According to Dr Armstrong, *inward fits*, as they are called, are in general the first complaint that appears in children; and as far as he has observed, most, if not all infants, during the first months, are more or less liable to them. The symptoms are these. The child appears as if it was asleep, only the eyelids are not quite closed; and if you observe them narrowly, you will see the eyes frequently twinkle, with the white of them turned up. There is a kind of tremulous motion in the muscles of the face and lips, which produces something like a simper or a smile, and sometimes almost the appearance of a laugh. As the disorder increases, the infant's breath seems now and then to stop for a little; the nose becomes pinched; there is a pale circle about the eyes and mouth, which sometimes changes to livid, and comes and goes by turns; the child starts, especially if you go to stir it though ever so gently, or if you make any noise near it. Thus disturbed, it sighs, or breaks wind, which gives relief for a little, but presently it relapses into the dozing. Sometimes it struggles hard before it can break wind, and seems as if falling into convulsions; but a violent burst of wind from the stomach, or vomiting, or a loud fit of crying, sets all to rights again. As the child increases in strength, these fits are the more apt to go off spontaneously and by degrees; but in case they do not, and if there is nothing done to remove them, they either degenerate into an almost constant drowsiness, (which is succeeded by a fever and the thrush), or else they terminate in vomitings, sour, curdled, or green stools, the watery-gripes, and convulsions. The thrush indeed very often terminates in these last symptoms. Wherefore, as these complaints naturally run into one another, or succeed one another, they may be considered, in a manner, as only different stages of the same disease, and which derive their origin from the same cause. Thus, the inward fits may be looked upon as the first stage of the disorder; the fever, and thrush (when it happens), as the second; the vomitings, sour, curdled, green or watery stools, as the third; and convulsions, as the last.

As to the cause of these complaints, he observes, that in infants the glandular secretions, which are all more or less glutinous, are much more copious than in adults. During the time of sucking, the glands of the mouth and fauces being squeezed by the contraction of the muscles, spue out their contents plentifully;

which afterwards mixing with the mucus of the gullet and stomach, render the milk of a slimy consistence, by which means it is not so readily absorbed into the lacteals; and as in most infants there is too great an acidity in the stomach, the milk is thereby curdled, which adds to the load; hence sickness and spasms, which, being communicated by sympathy to the nerves of the gullet and fauces, produce the convulsive motions above described, which go commonly by the name of *inward fits*. The air, likewise, which is drawn in during suction, mixing with the milk, &c. in the stomach, perhaps contributes towards increasing the spasms above-mentioned. Dr Armstrong is the more induced to attribute these fits to the causes now assigned, that they always appear immediately after sucking or feeding; especially if the child has been long at the breast, or fed heartily, and has been laid down to sleep without having first broken wind, which ought never to be done. Another reason is, that nothing relieves them so soon as belching or vomiting; and the milk or food they throw up is generally either curdled, or mixed with a large quantity of heavy phlegm. In case they are not relieved by belching or vomiting, the fits sometimes continue a good while, and gradually abate, according as the contents of the stomach are pushed into the intestines; and as soon as the former is pretty well emptied, the child is waked by hunger, cries, and wants the breast; he sucks, and the same process is repeated.—Thus, some children for the first weeks are kept almost always in a dose, or seemingly so; especially if the nurses, either through laziness or want of skill, do not take care to rouse them when they perceive that it is not a right sleep, and keep them awake at proper intervals. This dozing is reckoned a bad sign amongst experienced nurses; who look upon it as a forerunner of the thrush, as indeed it often is; and therefore, when it happens, we ought to be upon our guard to use the necessary precautions for preventing that disorder.

For these disorders, the only remedy recommended by Dr Armstrong is antimonial wine, given in a few drops, according to the age of the infant. By this means the superabundant mucus will no doubt be evacuated; but at the same time we must remember, that this evacuation can only *palliate*, and not cure the disease. This can only be effected by tonics; and a decoction of the Peruvian bark, made into a syrup, will readily be taken by infants, and may be safely exhibited from the very day they come into the world, or as soon as their bowels are emptied of the meconium by the mother's milk or any other means.

Dr Clarke observes, that *fractures* of the limbs, and *compressions* of the brain, often happen in difficult labours; and that the latter are often followed by convulsions soon after delivery. In these cases, he says, it will be advisable to let the navel-string bleed two or three spoonfuls before it be tied. Thus the oppression of the brain will be relieved, and the disagreeable consequences just mentioned will be prevented. But if this has been neglected, and fits have actually come on, we must endeavour to make a revulsion by all the means in our power; as by opening the jugular vein, procuring an immediate discharge of the urine and meconium, and applying small blisters to the back, legs, or behind the ears. The semicupium, too, would seem to be useful in this case, by driving the oppressive load of fluids from the head and upper parts.

Diseases of
Children.

Diseases of
Children.

It sometimes happens after a tedious labour, that the child is so faint and weak as to discover little or no signs of life. In such a case, after the usual cleansing, the body should be immediately wrapped in warm flannel, and briskly tossed about in the nurse's arms, in order, if possible, to excite the languid circulation. If this fail, the breast and temples may be rubbed with brandy or other spirits; or the child may be provoked to cry, by whipping, or other stimulating methods, as the application of onion, or salt and spirit of hartshorn, to the mouth and nostrils. But after all these expedients have been tried in vain, and the recovery of the child absolutely despaired of, it has sometimes been happily revived by introducing a short catheter or blow-pipe into the mouth, and gently blowing into the lungs at different intervals. Such children, however, are apt to remain weak for a considerable time, so that it is often no easy matter to rear them; and therefore particular care and tenderness will be required in their management, that nothing may be omitted which can contribute either to their preservation or the improvement of their strength and vigour.

All the disorders which arise from a *retention* of the *meconium*, such as the *red gum*, may easily be removed by the use of gentle laxatives; but the great source of mortality among children is the *breeding* of their *teeth*. The usual symptoms produced by this are fretting; restlessness; frequent and sudden startings, especially in sleep; costiveness; and sometimes a violent diarrhoea, fever, or convulsions. In general, those children breed their teeth with the greatest ease, who have a moderate laxity of the bowels, or a plentiful flow of saliva during that time.

In mild cases, we need only, when necessary, endeavour to promote the means by which nature is observed to carry on the business of dentition in the easiest manner. For this purpose, if a costiveness be threatened, it must be prevented, and the body kept always gently open; and the gums should be relaxed by rubbing them frequently with sweet oils, or other softening remedies of that kind, which will greatly diminish the tension and pain. At the same time, as children about this period are generally disposed to chew whatever they get into their hands, they ought never to be without something that will yield a little to the pressure of their gums, as a crust of bread, a wax-candle, a bit of liquorice-root, or such like; for the repeated muscular action, occasioned by the constant biting and gnawing at such a substance, will increase the discharge from the salivary glands, while the gums will be so forcibly pressed against the advancing teeth, as to make them break out much sooner, and with less uneasiness, than would otherwise happen. Some likewise recommend a slice of the rind of fresh bacon, as a proper masticatory for the child, in order to bring moisture into its mouth, and facilitate the eruption of the teeth by exercising the gums. If these means, however, prove ineffectual, and bad symptoms begin to appear, the patient will often be relieved immediately by cutting the inflamed gum down to the tooth, where a small white point shows the latter to be coming forward. When the pulse is quick, the skin hot and dry, and the child of a sufficient age and strength, emptying the vessels by bleeding, especially at the jugular, will frequently be necessary here, as well as in

Diseases of
Children.

all other inflammatory cases; and the belly should be opened from time to time by emollient oily or mucilaginous glysters. But, on the contrary, if the child be low, sunk, and much weakened, repeated doses of the spirit of hartshorn, and the like reviving medicines, ought to be prescribed. Blisters applied to the back, or behind the ears, will often be proper in both cases. A prudent administration of opiates, when their use is not forbid by costiveness or otherwise, is sometimes of great service in difficult teething, as, by mitigating pain, they have a tendency to prevent its bad effects, as a fever, convulsions, or other violent symptoms; and often they are absolutely necessary, along with the testaceous powders, for checking an immoderate diarrhoea.

When cathartics are necessary, but the child seems too tender and weak to bear their immediate operation, they should be given to the nurse; in which case they will communicate so much of their virtues to the milk as will be sufficient to purge the infant. This at least certainly holds with regard to some cathartics; such, for example, as the infusion of fenna, particularly if a very weak infusion be employed, and not used to such an extent as to operate as a purgative to the nurse.

As most young children, if in health, naturally sleep much, and pretty soundly, we may always be apt to suspect that something is amiss when they begin to be subject to *watching* and *frights*; symptoms which seldom or never occur but either in consequence of some present disorder not yet taken notice of, or as the certain forerunners of an approaching indisposition. We should immediately, therefore, endeavour to find out their cause, that we may use every possible means to remove or prevent it; otherwise the want of natural rest, which is so very prejudicial to persons of all ages, will soon reduce the infant to a low and emaciated state, which may be followed by an hectic fever, diarrhoea, and all the other consequences of weakness and debility. These symptoms, being always the effects of irritation and pain, may proceed, in very young infants, from crudities or other affections of the *primæ viæ* producing flatulencies or gripes; about the sixth or seventh month, they may be owing to that uneasiness which commonly accompanies the breeding of the teeth; and after a child is weaned, and begins to use a different kind of food, worms become frequently an additional cause of watchings and disturbed sleep. Hence, to give the necessary relief on these occasions, the original complaint must first be ascertained from the child's age and other concomitant circumstances, and afterwards treated according to the nature of the case. Women and nurses are too apt to have recourse to opiates in the watchings of children, especially when their own rest happens to be much disturbed by their continual noise and clamour. But this practice is often prejudicial, and never ought to have place when the belly is in the least obstructed.

There is no complaint more frequent among children than that of worms, the general symptoms of which have been already enumerated; but it must be observed, that all the symptoms commonly attributed to worms alone, may be produced by a foulness of the bowels. Hence practitioners ought never to rest satisfied with administering to their patients such medi-

cines.

cines as are possessed only of an anthelmintic quality, but to join them with those which are particularly adapted for cleansing the *primæ viæ*; as it is uncertain whether a foulness of the bowels may not be the cause of all the complaints. This practice is still the more advisable, on account of viscid humours in the intestines affording lodgment to the ova of worms; which, without the convenience of such a receptacle, would be more speedily discharged from the body.

The difficulty of curing what is called a *worm fever*, arises, according to Dr Musgrave, from its being frequently attributed to worms, when the cause of the disorder is of a quite different nature. He does not mean to deny that worms do sometimes abound in the human body, nor that the irritation caused by them does sometimes produce a fever; but he apprehends these cases to be much more uncommon than is generally imagined, and that great mischief is done by treating some of the disorders of children as worm cases, which really are not so. Dr Hunter, it is observed, is of the same opinion on this point; and he has, we are told, dissected great numbers of children who have been supposed to die of worm-fevers, and whose complaints were of course treated as proceeding from worms, in whom, however, there appeared, upon dissection, to be not only no worms, but evident proofs of the disorder's having been of a very different nature.

The *spurious worm-fever*, as Dr Musgrave terms it, has, in all the instances he has seen of it, arisen evidently from the children having been indulged with too great quantities of fruit; though a poor cold diet may, he thinks, occasionally give birth to it. Every sort of fruit eaten in excess will probably produce it; but an immoderate use of cherries seems to be the most common cause of it. The approach of this disorder has a different appearance, according as it arises from a habit of eating fruit in rather too large quantities, or from an excessive quantity eaten at one time. In the former case, the patient gradually grows weak and languid; his colour becomes pale and livid; his belly swells and grows hard; his appetite and digestion are destroyed; his nights grow restless, or at least his sleep is much disturbed with startings, and then the fever soon follows; in the progress of which, the patient grows comatose, and at times convulsed; in which state, when it takes place to a high degree, he often dies. The pulse at the wrist, though quick, is never strong or hard; the carotids, however, beat with great violence, and elevate the skin so as to be distinctly seen at a distance. The heat is at times considerable, especially in the trunk; though at other times, when the brain is much oppressed, it is little more than natural. It is sometimes accompanied by a violent pain of the epigastric region, though more commonly the pain is slight, and terminates in a coma; some degree of pain, however, seems to be inseparable from it, so as clearly to distinguish this disorder from other comatose affections.

When a large quantity of fruit has been eaten at once, the attack of the disorder is instantaneous, and its progress rapid; the patient often passing, in the space of a few hours, from apparently perfect health, to a stupid, comatose, and almost dying state. The symptoms of the fever, when formed, are in both cases nearly the same; except that, in this latter sort, a little purulent matter is sometimes discharged, both by vo-

mit and stool, from the very first day. The stools, in both cases, exhibit sometimes a kind of curd resembling curdled milk, at other times a floating substance is observed in them; and sometimes a number of little threads and pellicles, and now and then a single worm.

Strong purgatives, or purges frequently repeated, in this disorder, are greatly condemned by Dr Armstrong, as they in general not only aggravate the symptoms already present, but are sometimes the origin of convulsions. Bloodletting is not to be thought of in any stage of the disorder.

Although frequent purging, however, be not recommended, yet a single vomit and purge are advised in the beginning of the disorder, with a view to evacuate such indigested matter and mucus as happens to remain in the stomach and bowels. These having operated properly, there is seldom occasion for repeating them; and it is sufficient, if the body be costive, to throw up, every second or third day, a clyster, composed of some grains of aloes, dissolved in five ounces of infusion of chamomile.

The principal part of the cure, however, depends upon external applications to the bowels and stomach; and as the cause of the disorder is of a cold nature, the applications must be warm, cordial, and invigorating; and their action must be promoted by constant actual heat.

The following is the form recommended.

“Take of leaves of wormwood and rue, each equal parts: make a saturated decoction in a sufficient quantity of water, with which foment the region of the stomach and abdomen for a quarter of an hour, repeating the fomentation every three or four hours. A poultice of the boiled herbs is to be applied after the fomentation, and constantly renewed as it cools.” For internal use, the following is all that has been found necessary. “Take of spirituous and simple cinnamon-water, each half an ounce; oil of almonds, an ounce and an half; balsamic syrup, three drachms. Mix, and shake the vial when used.” From two to six drachms are given every third hour.

When any nervous symptoms come on, or remain after the disorder is abated, they are easily removed by giving a pill with a grain or two of *asafœtida* once or twice a-day.

The diagnostics of worms are very uncertain; but, even in real worm cases, the treatment above recommended would, it is imagined, be much more efficacious than the practice commonly had recourse to. As worms either find the constitution weakly, or very soon make it so, the frequent repetition of purges, particularly mercurials, cannot but have a pernicious effect. Bares-foot is still more exceptionable, being in truth to be ranked rather among poisons than medicines. Worm-feed and bitters are too offensive to the palate and stomach to be long persisted in, though sometimes very useful. The powder of coralline creates disgust by its quantity; and the infusion of pink-root is well known to occasion now and then vertiginous complaints and fits.

Fomenting the belly night and morning with a strong decoction of rue and wormwood, is much recommended. It is a perfectly safe remedy, and, by invigorating the bowels, may thereby have some influence in rendering them capable of expelling such worms

Diseases of
Children.Medical
Electricity.

worms as they happen to contain. After the fomentation, it is advised to anoint the belly with a liniment, composed of one part of essential oil of rue, and two parts of a decoction of rue in sweet oil. It is, however, a matter of great doubt whether these external applications, in consequence of the articles with which they are impregnated, exert any influence on the worms themselves.

The diet of children disposed to worms, should be warm and nourishing, consisting in part at least of animal food, which is not the worse for being a little seasoned. Their drink may be any kind of beer that is well hopped, with now and then a small draught of porter or negus. A total abstinence from butter is not so necessary, perhaps, as is generally imagined. Poor cheese must by all means be avoided; but such as is rich and pungent, in a moderate quantity, is particularly serviceable. In the spurious worm-fever, the patient should be supported occasionally by small quantities of broth; and, at the close of it, when the appetite returns, the first food given should be of the kinds above recommended.

The diet here recommended will, perhaps, be thought extraordinary, as the general idea is at present, that, in the management of children, nothing is so much to be avoided as repletion and rich food. It is no doubt an error to feed children too well, or to indulge them with wine and rich sauces; but it is equally an error to confine them to too strict or too poor a diet, which weakens their digestion, and renders them much more subject to disorders of every kind, but particularly to disorders of the bowels. In regard to the spurious worm-fever, if it be true that acid fruits too plentifully eaten are the general cause of it, it follows as a consequence, that a warm nutritious diet, moderately used, will most effectually counteract the mischief, and soonest restore the natural powers of the stomach. Besides, if the disorder does not readily yield to the methods here directed, as there are many examples of its terminating by an inflammation and suppuration of the navel, it is highly advisable to keep this probability in view, and, by a moderate allowance of animal-food, to support those powers of nature, from which only such a happy crisis is to be expected.

Of MEDICAL ELECTRICITY.

THE application of this subtle fluid to medicinal purposes was thought of soon after the discovery of the electric shock; and after various turns of reputation, its medical virtues seem now to be pretty well established. After giving so particular a description of the electrical apparatus under the proper article, it would here be superfluous to say any thing farther on that head. We shall only observe, that Mr Cavallo, who has published the latest and the best treatise on Medical Electricity, entirely disapproves of giving violent shocks, and finds it most efficacious to expose the patient to the electrical aura discharged from an iron or a wooden point; or if shocks are given, they should be very slight, and not exceed 12 or 14 at a time. In this way he recommends it as effectual in a great number of disorders. The patient may be electrified from three to ten minutes; but if sparks are drawn, they

should not exceed the number of shocks above mentioned.

Rheumatic disorders, even of long standing, are relieved, and generally quite cured, by only drawing the electric fluid with a wooden point from the part, or by drawing sparks through flannel. The operation should be continued for about four or five minutes, repeating it once or twice every day.

Deafness, except when it is occasioned by obliteration or other improper configuration of the parts, is either entirely or partly cured by drawing the sparks from the ear with the glass-tube director, or by drawing the fluid with a wooden point. Sometimes it is not improper to send exceedingly small shocks (for instance, of one-thirteenth of an inch) from one ear to the other.—It has been constantly observed, that whenever the ear is electrified, the discharge of the wax is considerably promoted.

The toothach, occasioned by cold, rheumatism, or inflammation, is generally relieved by drawing the electric fluid with a point, immediately from the part, and also externally from the face. But when the body of the tooth is affected, electrification is of no use; for it seldom or never relieves the disorder, and sometimes increases the pain to a prodigious degree.

Swellings in general, which do not contain any matter, are frequently cured by drawing the electric fluid with a wooden point. The operation should be continued for three or four minutes every day.—It is very remarkable, that in some cases of white swellings, quite cured by means of electricity, the bones and cartilages were in some measure disfigured.

Inflammations of every sort are generally relieved by a very gentle electrization.

In inflammations of the eyes, the throwing of the electric fluid by means of a wooden point is often attended with great benefit; the pain being quickly abated, and the inflammation being generally dissipated in a few days. In these cases, the eye of the patient must be kept open; and care should be taken not to bring the wooden point very near it, for fear of causing any spark. Sometimes it is sufficient to throw the fluid with a metal point; for in these cases, too great an irritation should be always avoided. It is not necessary to continue this operation for three or four minutes without intermission; but after throwing the fluid for about half a minute, a short time may be allowed to the patient to rest and to wipe his tears, which generally flow very copiously; then the operation may be continued again for another half minute, and so on for four or five times every day.

The gutta serena has been sometimes cured by electrization; but at the same time it must be confessed, it has proved ineffectual in many such cases, in which it was administered for a long time and with all possible attention. However, it has never been known that any body was made worse by it. The best method of administering electricity in such cases, is first to draw the electric fluid with a wooden point for a short time, and then to send about half a dozen of shocks of one-twentieth of an inch from the back and lower part of the head to the fore head, very little above the eye.

A remarkable disease of the eye was some time ago perfectly cured by electrization; it was an opacity of the vitreous humour of the eyes.

Medical
Electricity.

All the cases of *fistula lacrymalis* which Mr Cavallo hath known to have been electrified by persons of ability for a sufficient time, have been entirely cured. The method generally practised has been that of drawing the fluid with a wooden point, and to take very small sparks from the part. The operation may be continued for about three or four minutes every day. It is remarkable, that in those cases, after curing the *fistula lacrymalis*, no other disease was occasioned by it, as blindness, inflammations, &c. by suppressing that discharge.

Palpies are seldom perfectly cured by means of electricity, especially when they are of long standing; but they are generally relieved to a certain degree. The method of electrifying in those cases, is to draw the fluid with the wooden point, and to draw sparks thro' flannel, or through the usual coverings of the part if they are not too thick. The operation may be continued for about five minutes per day.

Ulcers, or open sores of every kind, even of a long standing, are generally disposed to heal by electrization. The general effects are a diminution of the inflammation, and at first a promotion of the discharge of properly formed matter; which discharge gradually lessens, according as the limits of the sore contract, till it be quite cured. In these cases the gentlest electrization must be used, in order to avoid too great an irritation, which is generally hurtful. To draw or throw the fluid with a wooden or even with a metal point, for three or four minutes per day, is fully sufficient.

Cutaneous eruptions have been successfully treated with electrization: but in these cases it must be observed, that if the wooden point be kept too near the skin, so as to cause any considerable irritation, the eruption will be caused to spread more; but if the point be kept at about six inches distance, or farther, if the electrical machine be very powerful, the eruptions will be gradually diminished, till they are quite cured. In this kind of disease, the immediate and general effect of the wooden point is to occasion a warmth about the electrified part, which is always a sign that the electrization is rightly administered.

The application of electricity has perfectly cured various cases of *St Vitus's dance*, or of that disease which is commonly called so; for it is the opinion of some very learned physicians, that the real disease called *St Vitus's dance*, which formerly was more frequent than it is at present, is different from that which now goes under that name. In this disease shocks of about one-tenth of an inch may be sent through the body in various directions, and also sparks may be taken. But if this treatment prove very disagreeable to the patient, then the shocks must be lessened, and even omitted; instead of which, some other more gentle applications must be substituted.

Scrophulous tumors, when they are just beginning, are generally cured by drawing the electric fluid with a wooden or metal point from the part. This is one of those kinds of diseases in which the action of electricity requires particularly the aid of other medicines in order to effect a cure more easily; for scrophulous affections commonly accompany a great laxity of the habit, and a general cachexy, which must be obviated by proper remedies.

N^o 209.

In *cancers*, the pains only are commonly alleviated by drawing the electric fluid with a wooden or metal point. Mr Cavallo, however, mentions one case in which a most confirmed cancer of very long standing, on the breast of a woman, had been much reduced in size. It is remarkable, that this patient was so far relieved by drawing the fluid with a metal point from the part, that the excruciating pains she had suffered for many years did almost entirely disappear; and also, that when the electric fluid was drawn by means of a wooden point, the pains did rather increase.

Abscesses, when they are in their beginning, and in general whenever there is any tendency to form matter, are dispersed by electrization. Lately, in a case in which matter was formed upon the hip, called the *lumbar abscess*, the disease was perfectly cured by means of electricity. The *sciatica* has also been often cured by it. In all such cases, the electric fluid must be sent through the part by means of two directors applied to opposite parts, and in immediate contact either with the skin, or with the coverings, when these are very thin. It is very remarkable, that the mere passage of the electric fluid in this manner is generally felt by the patients afflicted with those disorders, nearly as much as a small shock is felt by a person in good health. Sometimes a few shocks have been also given, but it seems more proper to omit them; because sometimes, instead of dispersing, they rather accelerate the formation of matter.

In cases of *pulmonary inflammations*, when they are in the beginning, electrization has been sometimes beneficial; but in confirmed diseases of the lungs, it does not seem to have ever afforded any unquestionable benefit; however, it seems that in such cases the power of electricity has been but seldom tried.

Nervous headaches, even of a long standing, are generally cured by electrization. For this disease, the electric fluid must be thrown with a wooden, and sometimes even with a metal point, all round the head successively. Sometimes exceedingly small shocks have been administered; but these can seldom be used, because the nerves of persons subject to this disease are so very irritable, that the shocks, the sparks, and sometimes even the throwing the electric fluid with a wooden point kept very near the head, throw them into convulsions.

The application of electricity has often been found beneficial in the *dropsy* when just beginning, or rather in the tendency to a dropsy; but it has never been of any use in advanced dropsies. In such cases, the electric fluid is sent through the part, in various directions, by means of two directors, and sparks are also drawn across the flannel or the cloaths; keeping the metal rod in contact with them, and shifting it continually from place to place. This operation should be continued at least ten minutes, and should be repeated once or twice a-day.—Perhaps in those cases, a simple electrization (viz. to insulate the patient, and to connect him with the prime conductor whilst the machine is an action), continued for a considerable time, as an hour or two, would be more beneficial.

The *gout*, extraordinary as it may appear, has certainly been cured by means of electricity, in various instances. The pain has been generally mitigated, and sometimes the disease has been removed so well as not to

Medical
Electricity.

Medical
Electricity.

to return again. In those cases, the electric fluid has been thrown by means of a wooden point, although sometimes, when the pain was too great, a metal point only has been used.

Agues have not unfrequently been cured by electricity, so that sometimes one electrization or two have been sufficient. The most effectual and sure method has been that of drawing sparks through flannel, or the cloaths, for about ten minutes or a quarter of an hour. The patients may be electrified either at the time of the fit, or a short while before the time in which it is expected.

The suppression of the menses, which is a disease of the female sex that often occasions the most disagreeable and alarming symptoms, is often successfully and speedily cured by means of electricity, even when the disease is of long standing, and after the most powerful medicines used for it have proved ineffectual. The cases of this sort in which electrization has proved useless are so few, and the successful ones so numerous, that the application of electricity for this disease may be justly considered as an efficacious and certain remedy. Great attention and knowledge is required, in order to distinguish the arrest of the menses from a state of pregnancy. In the former, the application of electricity, as we observed above, is very beneficial; whereas, in the latter, it may be attended with very disagreeable effects: it is therefore a matter of great importance to ascertain the real cause of the disease, before the electricity be applied in those cases. Pregnant women may be electrified for other diseases, but always using very gentle means, and directing the electric fluid through other parts of the body distant from those subservient to generation. In the real suppression of the menses, small shocks, *i. e.* of about one-twentieth of an inch, may be sent through the pelvis; sparks may be taken through the cloaths from the parts adjacent to the seat of the disease; and also the electric fluid may be transmitted by applying the metallic or wooden extremities of two directors to the hips, in contact with the clothes; part of which may be removed in case they be too thick. Those various applications of electricity should be regulated according to the constitution of the patient. The number of shocks may be about 12 or 14. The other applications may be continued for two or three minutes; repeating the operation every day. But either strong shocks, or a stronger application of electricity than the patient can conveniently bear, should be carefully avoided; for by those means, sometimes more than a sufficient discharge is occasioned, which is not easily cured. In cases of uterine hæmorrhagies, it is not known that the application of electricity was ever beneficial. Perhaps a very gentle electrization, so as to keep the patient insulated and connected with the prime conductor, whilst the electrical machine is in action, may be of some benefit.

In respect to *unnatural discharges* and *fluxus* in general, it may be observed, that some discharges are quite unnatural or adventitious, as the fistula lacrymalis, and some species of the venereal disease; but others are only increased natural discharges, such as the menses, perspiration, &c. Now the power of electricity in general has been found more beneficial for the

VOL. XI. Part I.

first than for the second sort of discharges, which are mostly increased by it.

In the *venereal disease*, electrization has been generally forbidden; having commonly increased the pains, and other symptoms, rather than diminished them. Indeed, considering that any sort of stimulus has been found hurtful to persons afflicted with that disorder, it is no wonder that electricity has produced some bad effects, especially in the manner it was administered some time ago, *viz.* by giving strong shocks. However, it has been lately observed, that a very gentle application of electricity, as drawing the fluid by means of a wooden or metal point, is peculiarly beneficial in various cases of this kind, even when the disease has been of long standing. Having remarked above, that tumors, when just beginning, are dispersed, and that unnatural discharges are gradually suppressed by a judicious electrization, it is superfluous to describe particularly those states of the venereal disease in which electricity may be applied; it is only necessary to remind the operator to avoid any considerable stimulus in cases of this sort.

The application of electricity has been found also beneficial in other diseases besides those mentioned above; but as the facts are not sufficiently numerous, so as to afford the deduction of any general rules, we have not thought proper to take any particular notice of them.

We may lastly observe, that, in many cases, the help of other remedies to be prescribed by the medical practitioner will be required to assist the action of electricity, which by itself would perhaps be useless; and, on the other hand, electrization may often be applied to assist the action of other remedies, as of sudorifics, strengthening medicines, &c.

OF FIXED AIR as a MEDICINE.

412

THE antiseptic qualities of fixed air, or as it is now more generally called of the *aerial* or *carbonic acid*, have of late introduced it as a medicine in cases of putrid disorders, and various other complaints.—Dr Percival observes, that though fatal if inspired in a very large quantity, it may in smaller quantities be breathed without danger or uneasiness. And it is a confirmation of this conclusion, that at Bath, where the waters copiously exhale this mineral spirit, the bathers inspire it with impunity. At Buxton also, where the bath is in a close vault, the effects of such effluvia, if noxious, must certainly be perceived.

Encouraged by these and some other considerations, he has administered fixed air in more than 30 cases of the *phthisis pulmonalis*, by directing his patients to inspire the steams of an effervescing mixture of chalk and vinegar through the spout of a coffee-pot. The hectic fever has in several instances been considerably abated, and the matter expectorated has become less offensive and better digested. He has not, however, been so fortunate in any one case as to effect a cure; although the use of mephitic air has been accompanied with proper internal medicines. But Dr Withering has been more successful. One phthisical patient under his care, by a similar course, entirely recovered; another was rendered much better; and a third, whose case was truly deplorable, seemed to be kept alive by

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Medical
Electricity.

Fixed Air, it more than two months. It may be proper to observe, that fixed air can only be employed with any prospect of success in the latter stages of the *phthisis pulmonalis*, when a purulent expectoration takes place. After the rupture and discharge of a vomica also, such a remedy promises to be a powerful palliative. Antiseptic fumigations and vapours have been long employed, and much extolled, in cases of this kind. The following experiment was made to determine whether their efficacy in any degree depends on the separation of fixed air from their substance.

One end of a bent tube was fixed in a phial full of lime-water; the other end in a bottle of the tincture of myrrh. The junctures were carefully luted; and the phial containing the tincture of myrrh was placed in water, heated almost to the boiling point, by the lamp of a tea-kettle. A number of air-bubbles were separated, but probably not of the mephitic kind; for no precipitation ensued in the lime-water. This experiment was repeated with the *tinct. Tolutana Ph. Ed.* and with *sp. vinos. camph.* and the result was entirely the same. The medicinal action therefore of the vapours raised from such tinctures, cannot be ascribed to the extrication of fixed air; of which it is probable bodies are deprived by chemical solution as well as by mixture.

If mephitic air be thus capable of correcting purulent matter in the lungs, we may reasonably infer it will be equally useful when applied externally to *foul ulcers*; and experience confirms the conclusion. Even the sanies of a cancer, when the carrot-poultice failed, has been sweetened by it, the pain mitigated, and a better digestion produced. But though the progress of the cancer seems to be checked by the fixed air, it is to be feared that a cure will not be effected. A palliative remedy, however, in a disease so desperate and loathsome, may be considered as a very valuable acquisition. Perhaps nitrous air might be still more efficacious. This species of factitious air is obtained from all the metals, except zinc, by means of the nitrous acid; as a sweetener and antiseptic, it far surpasses fixed air.

In the ulcerous *fore throat*, much advantage has been experienced from the vapours of effervescing mixtures drawn into the *fauces*. But this remedy should not supersede the use of other antiseptic applications.

In *malignant fevers*, wines abounding with fixed air may be administered to check the septic ferment, and sweeten the putrid *colluvies* in the *prima via*. If the laxative quality of such liquors be thought an objection to the use of them, wines of a greater age may be given, impregnated with aerial acid.—The patient's common drink might also be medicated in the same way. A putrid diarrhoea frequently occurs in the latter stage of such disorders; and it is a most alarming and dangerous symptom. If the discharge be stopped by astringents, a putrid *fomes* is retained in the body, which aggravates the delirium, and increases the fever. On the contrary, if it be suffered to take its course, the strength of the patient must soon be exhausted, and death unavoidably ensue. The injection of mephitic air into the intestines, under these circumstances, bids fair to be highly serviceable. And in some cases of this kind,

the gas emitted from a mixture of chalk and oil of Fixed Air, conveyed into the body by the machine employed for tobacco-clysters, quickly restrained the diarrhoea, corrected the heat and fetor of the stools, and in a short time removed every symptom of danger.

As a *solvent* of the *calculus*, its virtues have been already mentioned; but the experiments made on that subject do not determine the matter with sufficient accuracy.

Observations on the MEANS of Preserving HEALTH.

I. RULES for the Management of VALETUDINARIANS.

413

THAT part of the medical system which lays down rules for the preservation of health, and prevention of diseases, termed *Hygiene*, is not to be strictly understood as if it respected only those people who enjoy perfect health, and who are under no apprehensions of disease, for such seldom either desire or attend to medical advice; but should rather be considered as relating to valetudinarians, or to such as, though not actually sick, may yet have sufficient reason to fear that they will soon become so: hence it is that the rules must be applied to correct morbid dispositions, and to obviate the various things that were shown to be the remote or possible causes of diseases.

From the way in which the several temperaments are usually mentioned by systematic writers, it should seem as if they meant that every particular constitution must be referred to one or other of the four; but this is far from being reducible to practice, since by much the greater number of people have constitutions so indistinctly marked, that it is hard to say to which of the temperaments they belong.

When we actually meet with particular persons who have evidently either,

1. Too much strength and rigidity of fibre, and too much sensibility;
 2. Too little strength, and yet too much sensibility;
 3. Too much strength, and but little sensibility; or,
 4. But little sensibility joined to weakness;
- we should look on such persons as more or less in the valetudinary state, who require that these morbid dispositions be particularly watched, lest they fall into those diseases which are allied to the different temperaments.

People of the first-mentioned temperament being liable to suffer from continued fevers, especially of the inflammatory species, their scheme of preserving health should consist in temperate living, with respect both to diet and exercise; they should studiously avoid immoderate drinking, and be remarkably cautious lest any of the natural discharges be checked. People of this habit bear evacuations well, especially bleeding: they ought not, however, to lose blood but when they really require to have the quantity lessened; because too much of this evacuation would be apt to reduce the constitution to the second-mentioned temperament, wherein strength is deficient, but sensibility redundant.

Persons of the second temperament are remarkably prone to suffer from painful and spasmodic diseases, and are easily ruffled; and those of the softer sex who have this,

Means of
preserving
Health.

this delicacy of habit, are very much disposed to hysterical complaints. The scheme here should be, to strengthen the solids by moderate exercise, cold bathing, the Peruvian bark, and chalybeate waters; particular attention should constantly be had to the state of the digestive organs, to prevent them from being overloaded with any species of saburra which might engender flatulency, or irritate the sensible membranes of the stomach and intestines, from whence the disorder would soon be communicated to the whole nervous system. Persons of this constitution should never take any of the drastic purges, nor strong emetics; neither should they lose blood but in cases of urgent necessity. But a principal share of management, in these extremely irritable constitutions, consists in avoiding all sudden changes of every sort, especially those with respect to diet and clothing, and in keeping the mind as much as possible in a state of tranquillity: hence the great advantages which people of this frame derive from the use of medicinal waters drunk on the spot, because of that freedom from care and serious business of every kind, which generally obtains in all the places laid out for the reception of valetudinarians.

The third-mentioned temperament, where there is an excess of strength and but little sensibility, does not seem remarkably prone to any distressing or dangerous species of disease; and therefore it can hardly be supposed that persons so circumstanced will either of themselves think of any particular scheme of management, or have recourse to the faculty for their instructions: such constitutions, however, we may observe, bear all kinds of evacuations well, and sometimes require them to prevent an over-fulness, which might end in an oppression of the brain or some other organ of importance.

But the fourth temperament, where we have weakness joined to want of sensibility, is exceedingly apt to fall into tedious and dangerous diseases, arising from a defect of absorbent power in the proper sets of vessels, and from remissness of the circulation in general: whence corpulency, dropsy, jaundice, and different degrees of scorbutic affection. In order to prevent these, or any other species of accumulation and depravation of the animal fluids, the people of this constitution should use a generous course of diet, with brisk exercise, and be careful that none of the secretions be interrupted, nor any of the natural discharges suppressed. These constitutions bear purging well, and often require it; as also the use of emetics, which are frequently found necessary to supply the place of exercise, by agitating the abdominal viscera, and are of service to prevent the stagnation of bile, or the accumulation of mucous humours, which hinder digestion, and clog the first passages. The free use of mustard, horse-radish, and the like sort of stimulating dietetics, is serviceable in these torpid habits.

When the general mass of fluids is accumulated beyond what is conducive to the perfection of health, there arises what the writers term a *plethora*, which may prove the source of different diseases; and therefore, when this overfulness begins to produce languor and oppression, care should be taken in time to reduce the body to a proper standard, by abridging the food and increasing the natural discharges, using more exercise, and indulging less in sleep.

Means of
preserving
Health.

But in opposite circumstances, where the fluids have been exhausted, we are to attempt the prevention of further waste by the use of strengthening stomachics, nourishing diet, and indulgence from fatigue of body or mind.

Vitiated fluids are to be considered as affected either with the different kinds of general acrimony, or as betraying signs of some of the species of morbid matter which give rise to particular diseases, such as gout, rheumatism, calculus, scurvy, &c.

During the state of infancy, we may sometimes observe a remarkable acidity, which not only shows itself in the first passages, but also seems to contaminate the general mass of fluids. As it takes its rise, however, from weak bowels, our views, when we mean to prevent the ill consequences, must be chiefly directed to strengthen the digestive organs, as on their soundness the preparation of good chyle depends; and hence small doses of rhubarb and chalybeates (either the natural chalybeate waters mixed with milk, or the *flores martiales* in doses of a few grains, according to the age of the child), are to be administered; and the diet is to be so regulated as not to add to this acid tendency: brisk exercise is likewise to be enjoined, with frictions on the stomach, belly, and lower extremities.

Where the fluids tend to the putrescent state, which shows itself by fetid breath, sponginess, and bleeding of the gums, a bloated look and livid cast, the diet then should be chiefly of fresh vegetables and ripe fruits, with wine in moderation, brisk exercise, and strengthening bitters.

Where acrimony shows itself by itching eruptions, uncommon thirst, and flushing heats, nothing will answer better than such sulphureous waters as the Harrowgate and Moffat in Britain, or the Lucan and Swadlinbar in Ireland; at the same time using a course of diet that shall be neither acrid nor heating.

So far with respect to those kinds of morbid matter which do not invariably produce a particular species of disease: but there are others of a specific nature, some of which are generated in the body spontaneously, and seem to arise from errors in diet, or other circumstances of ill management with respect to the animal economy; and hence it is sometimes possible, in some degree if not altogether, to prevent the ill consequences. Thus, there are instances where returns of the gout have been prevented by adhering strictly to a milk diet.

The rheumatism has also been sometimes warded off by wearing a flannel shirt, or by using the cold bath without interruption.

Calculus may be retarded in its progress, and prevented from creating much distress, by the internal use of soap and lime-water, by soap-lees taken in milk or in veal-broth, or by the use of aerated alkaline water, which may perhaps be considered as being both more safe and more efficacious, and at the same time more pleasant, than any of the other practices.

The scurvy may be prevented by warm clothing and perseverance in brisk exercise, by drinking wine or cyder, and eating freely of such vegetable substances as can be had in those situations where this disease is most apt to show itself.

In constitutions where there is an hereditary disposition

Means of
preserving
Health.

fition to the scrofula, if early precautions be taken to strengthen the solids by cold bathing, a nourishing course of diet, and moderate use of wine, the acrimony which gives rise to the disease will probably be prevented from producing any very bad effects.

The other kinds of morbid matter, which are of the specific nature, are received into the body by infection or contagion.

The infection of a putrid fever or dysentery is best prevented by immediately taking an emetic on the first attack of the sickness or shivering; and if that do not completely answer, let a large blister be applied between the shoulders: by this method the nurses and other attendants on the sick in the naval hospitals have often been preserved. As to other infectious morbid matter, we must refer to what has already been said when treating of hydrophobia, poisons, &c.

The ill effects which may arise from the different species of *faburra*, are to be obviated, in general, by the prudent administration of emetics, and carefully abstaining from such kinds of food as are known to cause the accumulation of noxious matters in the first passages.

Crude vegetables, milk, butter, and other oily substances, are to be avoided by persons troubled with a sourness in the stomach; brisk exercise, especially riding, is to be used, and they are to refrain from fermented liquors: the common drink should be pure water; or water with a very little of some ardent spirit, such as rum or brandy. Seltzer and Vahls water are to be drunk medicinally; and aromatic bitters, infusions, or tinctures, with the acid elixir of vitriol, from 10 to 20 drops, will be found serviceable, in order to strengthen the fibres of the stomach, and promote the expulsion of its contents, thereby preventing the too hasty fermentation of the alimentary mixture. In order to procure immediate relief, *magnesia alba*, or *creta preparata*, will seldom fail; the *magnesia*, as well as the chalk, may be made into lozenges, with a little sugar and mucilage; and in that form may be carried about and taken occasionally by people afflicted with the acid *faburra*.

In constitutions where there is an exuberance or stagnation of bile, and a troublesome bitterness in the mouth, it is necessary to keep the bowels always free, by taking occasionally small doses of pure aloes, *oleum ricini*, cream of tartar, some of the common purging salts, or the natural purging waters.

When there is a tendency to the empyreumatic and rancid *faburra*, people should carefully avoid all the various kinds of those oily and high-seasoned things generally termed *made-dishes*, and eat sparingly of plain meat, without rich sauces or much gravy; and in these cases the most proper drink is pure water.

414

II. RULES for those who enjoy perfect HEALTH.

THERE can be no doubt, that, in general, temperance is the true foundation of health; and yet the ancient physicians, as we may see in the rules laid down by Celsus, did not scruple to recommend indulgence now and then, and allowed people to exceed both in eating and drinking: but it is safer to proceed to excess in drink than in meat; and if the debauch should create any extraordinary or distressing degree of pain or sickness, and a temporary fever

should ensue, there are two ways of shaking it off, either to lie in bed and encourage perspiration, or to get on horse-back and by brisk exercise restore the body to its natural state. The choice of these two methods must always be determined by the peculiar circumstances of the parties concerned, and from the experience which they may before have had which agrees best with them.

If a person should commit excess in eating, especially of high-seasoned things, with rich sauces, a draught of cold water, acidulated with vitriolic acid, will take off the sense of weight at the stomach, and assist digestion, by moderating and keeping within bounds the alimentary fermentation, and thus preventing the generation of too much flatus. The luxury of ices may be here of real service at the tables of the great, as producing similar effects with the cold water acidulated. Persons in these circumstances ought not to lay themselves down to sleep, but should keep up and exercise until they are sensible that the stomach is unloaded, and that they no longer feel any oppressive weight about the *præcordia*.

If a man be obliged to fast, he ought, if possible, during that time, to avoid laborious work: after suffering severe hunger, people ought not at once to gorge and fill themselves; nor is it proper, after being overfilled, to enjoin an absolute fast: neither is it safe to rest totally immediately after excessive labour, nor suddenly fall hard to work after having been long without motion: in a word, all changes should be made by gentle degrees; for though the constitution of the human body be such that it can bear many alterations and irregularities without much danger, yet, when the transitions are extremely sudden, they cannot fail of producing some kind or degree of disorder.

It is also the advice of Celsus to vary the scenes of life, and not confine ourselves to any settled rules: but as inaction renders the body weak and listless, and exercise gives vigour and strength, people should never long omit riding, walking, or going abroad in a carriage; fencing, playing at tennis, dancing, or other similar engagements, which afford both exercise and amusement, as each shall be found most agreeable or convenient, are to be used in their turns, according to the circumstances and tendency to any particular species of disease. But when the weakness of old age shall have rendered the body incapable of all these, then dry frictions with the flesh-brush will be extremely requisite to preserve health, by accelerating the flow of humours through the smallest orders of vessels, and preventing the fluids from stagnating too long in the cellular interstices of the fleshy parts.

Sleep is the great restorer of strength; for, during this time, the nutritious particles appear to be chiefly applied to repair the waste, and replace those that have been abraded and washed off by the labour and exercise of the day; but too much indulgence in sleep has many inconveniences, both with respect to body and mind, as it blunts the senses, and encourages the fluids to stagnate in the cellular membrane; whence corpulency, and its necessary consequences languor and weakness.

The proper time for sleep is the night season, when darkness

Means of
preserving
Health.

Means of preserving Health. Means of darknefs and filence naturally bring it on: therefore day-fleep in general is not fo refreshing; and to fome people is really diftreffful, as creating an unufual giddinefs and languor, efpecially in perfons addicted to literary purfuits. Custom, however, frequently renders fleep in the day neceffary; and in thofe conftitutions where it is found to give real refrefhment, it ought to be indulged.

With regard to the general regimen of diet, it has always been held as a rule, that the fofter and milder kinds of aliment are moft proper for children and younger fubjects; that grown perfons fhould eat what is more fubftantial; and old people leffen their quantity of folid food, and increafe that of their drink.

I N D E X.

ABORTUS, n° 247.

Abscefs of the lungs, 186.

Acute Rheumatifm, 205.

Acrimony of the blood, 103.

Adynamia, 271.

Adipfia, 376.

Ægyptian Phyficians, 2.

Æfculapius, 4.

Ætius, 43.

Ageufia, 366.

Alexander, 44.

Amentia, 326.

Amaurofis, 360.

Amenorrhœa, 402.

Amphimerina cardiaca, 151.

Amphimerina paludofa, 152.

Anafarca, 339.

Anæfthefia, 367.

Anaphrodisia, 377.

Angina peâoris, 403.

Animal fat, 72.

Anorexia, 375.

Anofmia, 365.

Anxiety, 76.

Aphtha, 233.

Aphonia, 379.

Apocenfes, 385.

Apoplexia, 255.

Apoplexy, fanguineous, 256.

Serous, 257. *Hydrocephalic*, 258.

From atrabilis, 259.

From external violence, 260.

From poifons, 261.

From paffions of the mind, 262.

From catalepfis, 263.

From fuffocation, 264.

Appearance of the venereal difeafe, 53.

Appendix, 403.

Arabians, 46.

Arthrodynia, 209.

Arthropufis, 216.

Ascites, 343.

Afclepiades, 39.

Afthma, 291.

Atonic gout, 213.

Atrophia, 333.

B.

Baftard pleurify, 208.

Bleeding at the nofe, 235.

Bloody flux, 254.

Branks, n° 182.

Buff-coloured cruft on the

blood, 99.

Bulimia, 369.

Burning fever, 140.

C.

Cachexia, 330.

Caligo, 359.

Canine appetite, 369.

Canine madnefs, 322.

Cardiac fyncope, 273.

Carditis, 188.

Catalepfis, 263.

Cataract, 359.

Catarrhus, 251.

Catarrh, from cold, 252.

From contagion, 253.

Caufes of affections of the fo-

lids, 70.

Caufus, 140.

Celfus, 40.

Cellular texture, 71.

Cephalalgia, 405.

Chemical analyfis of the animal

folid, 68.

Chicken pox, 226.

Child-bed fever, 404.

Children, difeafes of, 410.

Chincough, 299.

Chlorofis, 277.

Cholera, 114.

Cholera, 308. Spontaneous,

309. Accidental, 310.

Chorea, 284.

Chronic rheumatifm, 209.

Circulation, 95.

Coeliac paffion, 315.

College of Salernum, 48.

Colica, 301. Pictonum, 303.

Stercoria, 304. Meconialis,

305. Callofa, 306. Calcu-

lofa, 307.

Confirmed phthifis, 239.

Continued fevers, 164.

Contractura, 384.

Constantine, 49.

Confumtion, pulmonary, 237.

Convulfio, 283.

Convulfive tertian, 133.

Corpulency, 335.

Coftivenefs, 108, 393.

Cough, n° 105.

Croup, 180.

Cynanche, 177. Tonfillar,

178. Maligna, 179. Tra-

chealis, 180. Pharyngea,

181. Parotideæ, 182.

Cystitis, 201. From internal

caufes, 202. From external

caufes, 203.

D.

Deafnefs, 363.

Debility, 91.

Delirium, 84.

Diabetes, 318. With fweet u-

rine, 319. With infipid u-

rine, 320.

Diarrhœa, 311. Feculent, 312.

Bilious, 313. Mucous, 314.

Difficulty of difcharging urine,

399.

Digestion, 107. Depraved, 275.

Discovery of the circulation,

55.

Difeafes from accident, 65.

From paffions of the mind,

66. From age and fex, 63.

From climate, 64. In the

muscular power, 87.

Distinction of difeafes, 57.

Division of the functions, 56.

Double quartan, 156.

Double tertian, 128.

Dropfy, 339. Of the brain,

258. Of the breast, 342.

Of the abdomen, 343. Of

the uterus, 344. Of the

ferotum, 345.

Dumbnefs, 380.

Duplicated quartan, 154.

Duplicated tertian, 129.

Dyæfthefia, 358.

Dyfcinefia, 378.

Dyfecaa, 363.

Dysenteria, 254.

Dysentery, 110.

Dyfofia, 361.

Dyforexia, 368.

Dyfpelfia, 275.

Dyfpematifmus, 401.

Dyfpnœa, 292. Catarrhal, 293.

Dry, 294. From changes of

weather, 295. From earthy

fubftances, 296. Watery,

297. From corpulency,

298.

Dyfuria, 118, 399. Calcu-

lofa, 400.

E.

Elephantiafis, 352.

Emphyfema, 336.

Empirics, 33.

Empyema, 187.

Enteritis, 195. Phlegmonodæa,

196. Eryfipelatofa, 197.

Enurefis, 390.

Ephidrofis, 387.

Epilepfia, 286. Cerebalis, 287.

Sympathica, 288. Occa-

fionalis, 289.

Epiphora, 388.

Epifchefes, 392.

Epiftaxis, 235.

Eriiftratus, 31.

Eruptive tertian, 134.

Erythema, 174.

Eryfipelas, 218. With blifters,

219. With phlyctenæ, 220.

Exanthemata, 217.

Exceffive perfpiration, 116.

Exceffive thirft, 370.

Exciting caufe of difeafes, 60.

F.

False appetite, 371.

Fainting, 272.

Febres, 125.

Feeling, 74.

Feeling, depraved, 367.

Fever, continued, 164. Remit-

tent, 138. Intermittent, 126.

Scarlet, 230. Child-bed,

404.

Fixed air, 412.

Flooding, 245.

Fluor albus, 250.

Frambæfia, 354.

Furor uterinus, 373.

G.

Galen, 41.

Gaftritis, 192. Phlegmonodæa,

193. Eryfipelatofa, 194.

General arrangement of dif-

eafes, 123.

Gonorr.

- Gonorrhœa*, n° 391.
Gout, 211.
 Greek physicians, 3.
Green sickness, 277.
Gutta serena, 360.
 H.
Hæmoptysis, 236.
Hæmorrhagia, 234.
Hæmorrhoids, 240.
Headach, 405, and p. 352.
Hearing, 80. Depraved, 364.
Heart-burn, 300.
Hætic fever, 170.
Hemiplegia, 267.
Hepatitis, 198.
Hepatic flux, 317.
Hereditary diseases, 62.
Herophilus, 32.
Hippocrates, 5. His writings, 6. His idea of nature, 7. Of the causes of disease, 8. His division of diseases, 9. His opinion of a crisis, 10. His accuracy in prognosis, 11. His maxims for the preservation of health, 12. His maxims respecting the cure of disease, 13. Diet, 14. Bathing, 17. Exercise, 18. Purgation, 19. Blood-letting, 20. Diuretics, 21. Specifics, 22. External applications, 23. Fomentations, 24. Fumigation, 25. Gargles, 26. Ointments, 27. Cataplasms, 28. Collyria, 29.
Hooping-cough, 299.
Hydrocele, 345.
Hydrocephalus, 340.
Hydrocephalic apoplexy, 258.
Hydrometra, 344.
Hydrophobia, 322. Rabiosa, 323. Spontanea, 324.
Hydrorachitis, 341.
Hydrothorax, 342.
Hypochondriasis, 276.
Hysteria, 321.
Hysteritis, 204.
 I.
Iærus, 356.
Idiotism, 86, 326.
Iliac passion, 113.
Impetigines, 348.
Incipient phthisis, 238.
Incontinence of urine, 120.
Incubus, 329.
Inflammation of the bladder, 201. Of the brain, 176. Of the heart, 188. Of the intestines, 195. Of the kidney, 200. Of the liver, 198. Of the lungs, 183. Of the mesentery, 191. Of the omentum, 190. Of the peritoneum, 189. Of the spleen, 199. Of the stomach, 192. Of the uterus, 204.
Inflammatory tertian, 135.—
Quinsy, 178.
Inoculation, 225.
Intermittentes, 125.
Intumescencia, 334.
Irregular tertian, 127.
Ischuria, 394. Renalis, 395. Ureterica, 396. Vesicalis, 397. Urethralis, 398.
Itching, 77.
Jaundice, 356.
Jewish physicians, 1.
King's evil, 349.
 L.
Lepra, 353.
Leucorrhœa, 250.
Lientery, 316.
Locales, 357.
Lochial discharge immoderate, 248.
Locked jaw, 280.
Looseness, 109.
Loss of voice, 379.
Lues venerea, 350.
Lumbago, 206.
 M.
Madness, melancholy, 327.—
 furious, 328.
Malignant sore throat, 179.
Mania, 328.
Marcores, 331.
Measles, 227.
Medical electricity, 411.
Melancholy and mania, 85.
Melancholia, 327.
Melene, 409.
Memory, 83.
Menorrhagia, 245. Vitiorum, 249.
Menses, immoderate flow of, 246.
Methodical sect, 36.
Miliaria, 229.
Misplaced gout, 215.
Mobility, 88.
Moderns, 54.
Morbid thinness of the blood, 101. Thickness of the blood, 102.
Mumps, 182.
Mutitas, 380.
 N.
Nausea, 112.
Nephritis, 200.
Nettle rash, 231.
Nervous consumption, 333.
Nervous Fever, 166.
Night-mare, 329.
Nirles, 228.
Nostalgia, 374.
Nymphomania, 373.
 O.
Obliquatio, n° 393.
Obstructed perspiration, 115.
Occasional syncope, 274.
Odontalgia, 210.
Oesophagus, dangerous affection of, 406.
Oneirodynia, 329.
Ophthalmia, 175.
Oribasius, 42.
Origin of diseases, 62.
 P.
Pain, 75.
Palpitation, 290.
Palpitation, 97.
Palsy, 92, 265.—From poisons, 269.
Paracelsus, 52.
Paracusis, 364.
Paraphonia, 381.
Paralysis, 265.
Paraplegia, 268.
Partial palsy, 266.
Paulus, 45.
Pemphigus, 232.
Peritonitis, 189.
Peripneumonia, 184.
Pertussis, 299.
Pestis, 221.
Phlegmasia, 171.
Phlegmone, 173.
Phlogosis, 172.
Phrenitis, 176.
Phthisis, 237.
Physconia, 346.
Physometra, 338.
Pica, 371.
Piles, 240. External, 241. From a procidentia ani, 242. Running, 243. Blind, 244.
Plague, 221.
Plethora, 100.
Plica polonica, 355.
Pleuritis, 185.
Pneumatosis, 336.
Pneumonia, 183.
Podagra, 211.
Poisons, 408.
Polyfarcia, 335.
Polydipsia, 370.
Praxagoras, 30.
Predisponent cause, 59.
Profusio, 386.
Proximate cause, 61.
Psellismus, 382.
Pseudoblephitis, 362.
Ptyalismus, 389.
Puerperal fever, 404.
Pulmonary consumption, 237.
Pulsation of the arteries, 96.
Putrid fever, 167.
Putrid sore throat, 179.
Pyrexia, 124.
Retrofio, 300.
 Q.
Qualities of the animal solids, n° 69.
Quartana, 153.
Quartan with symptoms of other diseases, 158. Complicated with other diseases, 159.
Quotidian genuine, 161. Partial, 162. Remitting, 163.
Quotidiana deceptiva, 150.
 R.
Rachitis, 347.
Raphania, 285.
Regular gout, 212.
Remittent tertian, 138.
Remitting quartan, 160.
Respiration, 104.
Retrocedent gout, 214.
Rheumatismus, 205.
Rheumatism in the loins, 206. In the hip-joint, 207. In the thorax, 208.
Rhases, 47.
Rickets, 347.
Rubeola, 227.
Rules for preserving health, 414.
Valetudinarians, 413.
 S.
St Anthony's fire, 218.
St Vitus's dance, 284.
Sanguineous apoplexy, 256.
Salivation, 389.
Satyriasis, 372.
Scarlatina, 230.
Sciatica, 207.
Scirrhus, 122.
Scorbutus, 351.
Scurvy, 351.
Scrofula, 349.
Sea scurvy, 351.
Semen, difficult emission of, 401.
Semi-tercian, 131.
Serapion, 34.
Serous apoplexy, 257.
Sight, 81.
Sleep, 94.
Sleepy tertian, 132.
Small-pox, 222. Distinct, 223. Confluent, 224. Inoculated, 225.
Smell, 79.
Smelling, depraved, 365.
Sneezing, 106.
Soranus, 39.
Spasm, 93.
Spasmi, 278.
Spasmodic colic, 302. Tertian, 133.
Spina bifida, 341.
Spitting of blood, 236.
Splenitis, 199.
Spurious tertian, 127.
Stope in the bladder, 400.
Strabismus, 383.
Strangury, 119.

State of medicine in the 15th and 16th centuries, 50. In the 17th and 18th centuries, n° 54.

Suppression of menses, 402. Of urine, 117, 394.

Sweating sickness, 51.

Symptoms of disease, 58.

Syncope, 98, 272.

Synocha, 164.

Synochus, 169.

Syphilis, 350.

T.

Tabs, 332.

Taste, 78.

Tasting, depraved, 366.

Tenesmus, 111.

Tertian complicated with other

disorders, 136. Varied from its origin, 137.

Tertiana, 126. Sub continua, 149.

Tetanus, 279.

Themison, 37.

Theffalus, 38.

Thrush, 233.

Toothach, 210.

Torpor, 90.

Tremor, 270.

Trichoma, 355.

Triple quartan, 157.

Triplicated quartan, 155.

Triple tertian, 130.

Trismus, 280. Of new born infants, 281. From wounds, ib.

Trytaeophya Americana, 148. Apodes, 144. Carotica, 145. Deceptiva, 147. Elodes, 143. Leipyia, 146. Syncopalis, 139. Typhodes, 142. Vratislaviensis, 141.

Tympanites, 337.

Typhus, 165. Mitior, 166. Gravior, 167. Cum flavedine cutis, 168.

U.

Urinary calculi, 121.

Urticaria, 231.

V.

Varicella, 226.

Variola, 222.

Variolodes, 228.

Venereal disease, 350.

Vertigo, n° 82.

Vesania, 325.

Vigour, 89.

Vis medicatrix naturæ, 67.

Vision depraved, 361.

Vital solids, 73.

Vomica, 186.

W.

Want of appetite, 375. Of thirst, 376.

Wasting of the body, 332.

Water brash, 300.

Water in the head, 340.

Whites, 250.

Worms, 407.

Y.

Yaws, 354.

Yellow fever, 168.

M E D

Medicines

Medici.

MEDICINES, whatever substances serve to restore health — Medicines are either *simple* or *compound*; the former being prepared by nature alone; and the latter owing to the industry of man, by variously mixing the simple together. See PHARMACY.

MEDICINES are likewise distinguished from the manner of using them, into *external* and *internal*; and with regard to their effects, they are said to be *emetic*, *cathartic*, *astringent*, &c. See MATERIA Medica.

Pocket MEDICINES, in surgery, those which a surgeon ought always to carry about with him, in a box or convenient case.

Those, according to Heister, are the common digestive ointment, and some detergent ointment, for cleansing and digesting foul ulcers; to which must also be added a plaster or two fitted for defence or adhesion, since one or other of these is almost constantly wanted. Neither should there be wanting a piece of blue vitriol for the taking down luxuriant flesh, and to stop hemorrhagies: but if vitriol is wanting, burnt alum, red precipitate, the infernal stone, or any other corrosive medicine, will supply its place in corrosive intentions; and the last will also serve to open abscesses, to make issues, and perform many other operations of that kind.

With these there should always be kept in readiness also a quantity of scraped lint, that the surgeon may be able to give immediate assistance to wounded persons; since, if he is unprepared for this, they may easily be taken off by an hemorrhagy; a circumstance which ought also to prevail with him to be always provided with suitable bandages.

MEDICIS (Cosmo de), called the *Elder*, son of John de Medicis, was born at Florence Sept. 1389. Altho' in a private station, he appeared with the splendor of the most powerful sovereign; and his fortune, accumulated by successful commerce, was surpassed by the revenue of few princes. He was partial to the sciences, and liberal to men of genius. His library consisted of a vast number of books of his own collecting, and he enriched it with many scarce and valuable manuscripts. Banished from his native country by the envy which

M E D

his riches inspired, he went to Venice, where he was received with the honours due to a sovereign prince. His countrymen soon perceived their error, and recalled him from banishment. For 34 years he was supreme judge of the republic; and his advice was solicited by the greater part of the cities and sovereignties of Italy. This great man died August 1464, in the 75th year of his age, full of happiness and glory. On his tombstone he is styled, "*Father of the people, and deliverer of his country.*"

MEDICIS (Laurence de), styled the *Great* and the *Father of learning*, was born A. D. 1448. He was the son of Peter, the grandson of Cosmo, and the brother of Julian de Medicis. These two brothers, who were in possession of absolute power at Florence, excited the jealousy of Ferdinand of Naples and Pope Sixtus IV. The first hated them, because they had ruined his influence in Florence; and the second, because they opposed the advancement of his nephew. It was at their instigation that the Pazzi conspired against them. Julian was murdered while he heard mass April 26th 1478; and Laurence, who was only wounded, was carried back to his house in the midst of the shouts and acclamations of the people. Heir to the greater part of his grandfather's virtues, he was, like him, the *Mæcenas* of his age. It was equally astonishing (says an historian of that country) and foreign to our manners, to see the same man engaged in commerce, and supporting the burden of the public affairs; conversing with factors, and receiving ambassadors; giving shows to the people; affording an asylum to the unfortunate; and adorning his country with many magnificent buildings. He was so much beloved by the Florentines, that they appointed him chief magistrate of the republic. By his unbounded liberality, he drew to his court a great number of learned men. He sent John Lascaris into Greece to recover manuscripts, with which he enriched his library. He cultivated learning himself, and was the author of the following works: 1. *Des Poësies Italiennes*, Venice, 1554, 12mo. 2. *Canzone à ballo*, 1568, 4to. 3. *La Compagnia del Mantellaccio Beoni*, with the sonnets of Burchiello,

Medici.

Medicis. *Burchiello*, 1558 or 1568, 8vo. Laurence de Medicis was so universally admired, that the princes of Europe did him the honour to appeal their differences to his decision. It is even reported, that Bajazet emperor of the Turks, to show him a mark of esteem and regard, caused search for the murderers of his brother Julian in Constantinople, and sent back one of them who had concealed himself in that city. Pope Sixtus IV. was the last of his enemies; but he opposed him with so much ability, that he brought him to terms of accommodation. This illustrious man died April 9th 1492, aged 44. His reputation was sullied by his passion for women and by his infidelity. His two sons, Peter who succeeded him and who was expelled from Florence in 1494, and John who went by the name of Pope Leo X. were like their father remarkable for their generosity and their love of learning. Peter died in 1504, leaving Laurence, the last male issue of this branch. Laurence was the father of Catharine de Medicis, who married Henry II. king of France.

MEDICIS (John de), on account of his bravery and knowledge in military affairs was surnamed the *Invincible*. He was the son of John, otherwise called *Fourdain*, de Medicis. His only son Cosmo I. styled the *Great*, was chosen duke of Florence after the murder of Alexander de Medicis, A. D. 1537. He first carried arms under Laurence de Medicis against the duke of Urbino, afterwards under Pope Leo X. Upon the death of Leo, he entered into the service of Francis I. which he quitted to follow the fortunes of Francis Sforza duke of Milan. When Francis I. formed an alliance with the pope and the Venetians against the emperor, he returned to his service. He was wounded in the knee at Governola, a small town in the Mantuan territory, by a musket-ball; and being carried to Mantua, he died the 29th of November 1526, aged 28. Brantome relates, that when his leg was to be cut off, and when he was informed that he needed some person to support him, "Proceed without fear (said he), I need nobody!" and he held the candle himself during the operation. This anecdote is also mentioned by Varchi. John de Medicis was above the middle stature, strong, and nervous. His soldiers, to express their affection for him and their concern for his loss, assumed a mourning dress and standards, which gave the name of *the black band* to the Tuscan troops whom he commanded.

MEDICIS, (Laurence, or Laurence de), was descended from a brother of Cosmo the Great, and affected the name of *popular*. In 1537, he killed Alexander de Medicis, whom Charles V. had made duke of Florence, and who was believed to be the natural son of Laurence de Medicis duke of Urbino. He was jealous of Alexander's power, and disguised this jealousy under the specious pretext of love to his country. He loved men of learning, and cultivated literature. His works are, 1. *Lamenti*, Modena, 12mo. 2. *Acidosio Commedia*, Florence 1595, 12mo. He died without issue.

MEDICIS, (Hypolitus de), natural son of Julian de Medicis and a lady of Urbino, was early remarkable for the brilliancy of his wit and the graces of his person. Pope Clement VII. his cousin, made him cardinal in 1529, and sent him as legate into Germany
N^o 209.

to the court of Charles V. When that prince went into Italy, Medicis, yielding to his warlike disposition, appeared in the dress of an officer, and advanced before the emperor, followed by several respectable gentlemen of the court. Charles, naturally suspicious, and afraid that the legate intended to do him some ill offices with the pope, sent after him and caused him to be apprehended. But when he understood that it was a mere sally of humour in the young cardinal, he set him at liberty in a few days. The character which Medicis obtained by the happy success of this appointment, was of essential service to him. He was considered as one of the supports of the Holy See; and a little before Clement's death, when the corsair Barbarossa made a descent into Italy to the great terror of Rome, which was only defended by 200 of the pope's guards, Medicis was dispatched to protect the coasts from the fury of the barbarians. On his arrival at the place of destination, he was fortunate enough to find that Barbarossa had withdrawn himself at that critical moment; which allowed him to claim the honour of the retreat without exposing his person or his army. When he returned to Rome, he was of great service in the election of Paul III. who nevertheless refused to make him legate to Ancona, though that office had been promised to him in the conclave. Enraged also that the pope had bestowed the principality of Florence on Alexander de Medicis, supposed to be the natural son of Laurence duke of Urbino, he was prompted by his ambition to believe that he might succeed to that dignity by the destruction of Alexander. He entered into a conspiracy against him, and determined to carry him off by a mine; but the plot was discovered before he had accomplished his purpose. Octavian Zanga, one of his guards, was arrested as his chief accomplice. Hypolitus de Medicis, apprehensive for his own safety, retired to a castle near Trivoli. On his road to Naples, he fell sick at Itri in the territory of Fondi, and died August 13th 1535, in his 24th year, not without suspicion of being poisoned. His house was an asylum for the unfortunate, and frequently for those who were guilty of the blackest crimes. It was open to men of all nations; and he was frequently addressed in 20 different languages. He had a natural son named *Asdrubal de Medicis*, who was a knight of Malta. This anecdote proves that his manners were more military than ecclesiastic. He wore a sword, and never put on the habit of cardinal except on occasions of public ceremony. He was wholly devoted to the theatre, hunting, and poetry.

MEDICIS, (Alexander de), first duke of Florence in 1530, was natural son of Laurence de Medicis surnamed the *Younger*, and nephew of pope Clement VII. He owed his elevation to the intrigues of his uncle and to the arms of Charles V. This prince having made himself master of Florence after an obstinate siege, conferred the sovereignty of this city on Alexander, and afterwards gave him in marriage Margaret of Austria his natural daughter. According to the terms of capitulation granted to the Florentines, the new duke was to be only hereditary doge, and his authority was tempered by councils; which left them at least a shadow of their ancient liberty. But
Alexander,

Medicis. Alexander, who felt himself supported by the emperor and the pope, was no-sooner in possession of his new dignity, than he began to govern like a tyrant; being guided by no law but his own caprice, indulging the most brutal passions, and making light of dishonouring families, and of violating even the asylum of the cloisters to gratify his lust. Among the confidants of his debauchery was a relation of his own, Laurence de Medicis. This young man, who was only 22 years of age, at the instigation of Philip Strozzi, a zealous republican, conceived the design of assassinating Alexander, and thereby of delivering his country from oppression. From the moment when he first became attached to him, he tried to gain his confidence, for no other reason but that he might the better have it in his power to take away his life. A considerable time elapsed before he found such an opportunity as he desired. At length, under pretence of procuring the duke a *tête à tête* with a lady of whom he was deeply enamoured, he brought him alone and unattended into his chamber, and put him under his bed. He went out, under pretence of introducing the object of his passion; and returned along with an assassin by profession, to whom alone he had entrusted his design, only to stab him. This cruel scene happened on the night betwixt the 5th and 6th of January 1537. Alexander was only 26 years of age. The Florentines derived no advantage from this crime of Laurence, for they failed in their attempt to recover their liberty. The party of the Medicis prevailed, and Alexander was succeeded by Cosmo; whose government, it must be confessed, was as just and moderate, as that of his predecessor had been violent and tyrannical. Laurence de Medicis fled to Venice, to some of the leaders of the malcontents at Florence, who had taken refuge there; but not thinking himself in sufficient security, he went to Constantinople, whence he returned some time after to Venice. He was there assassinated in 1547, ten years after the duke's murder, by two soldiers, one of whom had formerly been in Alexander's guards: And these soldiers were generous enough to refuse a considerable sum of money, which was the price put upon his head.

MEDICIS (Cosmo de), grand duke of Tuscany, joined Charles V. against the French, after trying in vain to continue neutral. As a reward for his services, the emperor added to the duchy of Tuscany Piombino the isle of Elba and other states. Cosmo soon after received from pope Pius IV. the title of *grand duke*; and had it not been opposed by all the princes of Italy, this pontiff, who was entirely devoted to Cosmo, because he had thought proper to acknowledge him to be of his house, would have conferred on him the title of *king*. There never was a more zealous patron of learning. Ambitious of imitating the second Cæsar, he, like him, was fond of learned men, kept them near his person, and founded for them the university of Pisa. He died in 1574, at the age of 55, after governing with equal wisdom and glory. In 1562 he instituted the military order of St Stephen. His son, Francis Mary, who died in 1587, was the father of Mary of Medicis the wife of Henry the Great, and of Ferdinand I. who died in 1608.

VOL. XI. Part I.

MEDIETAS LINGUÆ, in law, signifies a jury, or inquest impanelled, of which the one half are natives of this land and the other foreigners. This jury is never used except where one of the parties in a plea is a stranger and the other a denizen. In petit-treason, murder, and felony, foreigners are allowed this privilege; but not in high-treason, because an alien in that case shall be tried according to the rules of the common law, and not by a *medietas linguæ*. A grand jury ought not in any case to be of a *medietas linguæ*; and the person that would have the advantage of a trial in this way, is to pray the same, otherwise it will not be permitted on a challenge of the jurors.

MEDIMNUS, in Grecian antiquity, a measure of Capacity. See **MEASURE**.

MEDINA-TALNARI, a famous town of Arabia Petræa, between Arabia Deserta and Arabia the Happy; celebrated for being the burial-place of Mahomet. It stands at a day's journey from the port of Iambo. It is of moderate size, surrounded by wretched walls, and situated in the midst of a sandy plain. It belongs to the Scherif of Mecca, although it had of late times a particular sovereign of the family of Dacii Barkad. At present, the government is confided by the Scherif to a vizir, who must be taken from the family of the sovereign. Before Mahomet, this city was called *Iathreb*; but it got the name of *Medinet en Nebbi*, "the City of the Prophet," after Mahomet, being driven from Mecca by the Koreischites, had taken refuge there, and passed in it the rest of his days. The tomb of Mahomet at Medina is respected by Mussulmans, but they are under no obligation to visit it for the purposes of devotion. The caravans of Syria and Egypt alone, which on their return from Mecca pass near Medina, go a little out of their way to see the tomb. It stands in a corner of the great square, whereas the Kaba is situated in the middle of that at Mecca. That the people may not perform some superstitious worship to the relics of the prophet, they are prevented from approaching the tomb by grates, through which they may look at it. It consists of a piece of plain mason-work in the form of a chest, without any other monument. The tomb is placed between two others, where the ashes of the two first caliphs repose. Although it is not more magnificent than the tombs of the greater part of the founders of mosques, the building that covers it is decorated with a piece of green silk stuff embroidered with gold, which the pacha of Damascus renews every seven years. It is guarded by 40 eunuchs, who watch the treasure said to be deposited there. It is seated in a plain abounding with palm-trees, in E. Long. 39. 53. N. Lat. 25. See (*History of*) **ARABIA**.

MEDINA-Celi, an ancient town of Spain, in Old Castile, and capital of a considerable duchy of the same name; seated near the river Xalon, in W. Long. 2. 9. N. Lat. 41. 15.

MEDINA-de-las-Torres, a very ancient town of Spain, in Estramadura, with an old castle, and the title of a duchy. It is seated on the confines of Andalusia, at the foot of a mountain near Bajadoz.

MEDINA-del-Campo, a large rich, and ancient town of Spain, in the kingdom of Leon. The great square is very fine, and adorned with a superb fountain. It

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Medietas
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is a trading place, enjoys great privileges, and is seated in a country abounding with corn and wine. W. Long. 4. 20. Nat. Lat. 41. 22.

MEDINA-del-rio-Secco, an ancient and rich town of Spain, in the kingdom of Leon, with the title of a duchy: seated on a plain, where there are fine pastures. E. Long. 4. 33. N. Lat. 42. 8.

MEDINA (Sir JOHN), a very eminent painter, was son of Medina de L'Asturias, a Spanish captain who had settled at Brussels, where the son was born in 1660. He was instructed in painting by du Chatel; under whose direction he made good progress; and applying himself to the study of Rubens, made that eminent master his principal model. He painted both history and portrait; and was held in extraordinary esteem by most of the princes of Germany, who distinguished his merit by several marks of honour. He married young, and came into England in 1686, where he drew portraits for several years with great reputation; as he painted those subjects with remarkable freedom of touch, a delicate management of tints, and strong resemblance of the persons. The earl of Leven encouraged him to go to Scotland, and procured him a subscription of 500 l. worth of business. He went, carrying a large number of bodies and postures, to which he painted heads. He returned to England for a short time; but went back to Scotland, where he died, and was buried in the church-yard of the Greyfriars at Edinburgh in 1711, aged 52. He painted most of the Scotch nobility; but was not rich, having 20 children. The portraits of the professors in the surgeon's-hall at Edinburgh were painted by him, and are commended. At Wentworth-castle is a large piece containing the first duke of Argyle and his sons, the two late dukes John and Archibald, in Roman habits; the style Italian, and superior to most modern performers. In surgeon's-hall are two small histories by him. The duke of Gordon presented Sir John Medina's head to the great duke of Tuscany for his collection of portraits done by the painters themselves; the duke of Gordon too was drawn by him, with his son the marquis of Huntley and his daughter Lady Jane, in one piece. Medina was knighted by the duke of Queensberry, lord high commissioner; and was the last knight made in Scotland before the union. The prints in the octavo edition of Milton were designed by him; and he composed another set for Ovid's *Metamorphosis*, but they were never engraved.

MEDINE, an Egyptian piece of money, of iron silvered over, and about the size of a silver threepence.

MEDIOLANUM, an ancient city, the capital of the Insubres, built by the Gauls on their settlement in that part of Italy. A *municipium*, and a place of great strength. The seat of the liberal arts; whence it had the name of *Nova Athenæ*. Now *Milan*, capital of the Milanese, situated on the rivers Olana and Lombro, E. Long. 9. 30. N. Lat. 45. 25.

MEDIOLANUM Aulercorum (anc. geog.), a town of Gallia Celtica, which afterwards took the name of the *Eburovicum Civitas* (Antonine); corrupted to *Civitas Ebroicorum*, and this last to *Ebroica*; whence the modern appellation *Evreux*, a city of Normandy. E. Long. 1. 12. N. Lat. 49. 21.

MEDIOLANUM Gugernorum (anc. geog.), a town of *Mediomatrici* Gallia Belgica; now the village *Moyland*, not far from Cologne.

MEDIOLANUM Ordovicum (anc. geog.), a town of Britain, now *Llan Vethlin*, a market-town in Montgomeryshire in Wales.

MEDIOLANUM Santonum (anc. geog.), which afterwards taking the name of the people, was called *Santonica Urbs*; also *Santones* and *Santoni*: A town of Aquitain. Now *Saintes*, capital of Saintonge in Guienne, on the river Charente.

MEDIOMATRICI, anciently a territory of Belgica. Now the diocese of Metz.

MEDITATION, an act by which we consider any thing closely, or wherein the soul is employed in the search or consideration of any truth. In our religion, it is used to signify a consideration of the objects and grand truths of the Christian faith.

Mystic divines make a great difference between *meditation* and *contemplation*: the former consists in discursive acts of the soul, considering methodically and with attention the mysteries of faith and the precepts of morality; and is performed by reflections and reasonings, which leave behind them manifest impressions on the brain. The pure contemplative have no need of meditation, as seeing all things in God at a glance, and without any reflection. When a man, therefore, has once quitted meditation, and is arrived at contemplation, he returns no more; and, according to Alvarez, never resumes the oar of meditation, except when the wind of contemplation is too weak to fill his sails.

MEDITERRANEAN, something inclosed within land; or that is remote from the ocean.

MEDITERRANEAN is more particularly used to signify that large sea which flows between the continents of Europe and Africa, entering by the straits of Gibraltar, and reaching into Asia, as far as the Euxine Sea and the Palus Mæotis.

The Mediterranean was anciently called the *Grecian Sea* and the *Great Sea*. It is now cantoned out into several divisions, which bear several names. To the west of Italy it is called the *Liguric* or *Tuscan Sea*; near Venice, the *Adriatic*; towards Greece, the *Ionian* and *Ægean*; between the Hellespont and the Bosphorus, the *White Sea*, as being very safe; and beyond, the *Black Sea*, its navigation being dangerous.

The British trade carried on by means of the Mediterranean Sea is of the last consequence to Great Britain; and the permanent preservation thereof depends on the possession of the town and fortification of Gibraltar.

The counterfeiting of Mediterranean passes for ships to the coast of Barbary, &c. or the seal of the admiralty office to such passes, is felony without benefit of clergy. Stat. 4 Geo. II. c. 18.

MEDITRINALIA, a Roman festival in honour of the goddess Meditrina, kept on the 30th of September. Both the deity and the festival were so called a *medendo*, because on this day they began to drink new wine mixed with old by way of medicine. The mixture of wines, on this festival, was drank with much form and solemn ceremony.

MEDITULLIUM, is used by anatomists for that spungy

Medium || **Medusa.**
 spongy substance between the two plates of the *cranium*, and in the interstices of all laminated bones. See ANATOMY. n° 1, 11.

MEDIUM, in logic, the mean or middle term of a syllogism, being an argument, reason, or consideration, for which we affirm or deny any thing; or, it is the cause why the greater extreme is affirmed or denied of the less in the conclusion.

MEDIUM, in arithmetic, or *arithmetical medium* or *mean*, called in the schools *medium rei*; that which is equally distant from each extreme, or which exceeds the lesser extreme as much as it is exceeded by the greater, in respect of quantity, not of proportion; thus 9 is a medium betwixt 6 and 12.

Geometrical MEDIUM, called in the schools *medium personæ*, is that where the same ratio is preserved between the first and second as between the second and third terms; or that which exceeds in the same ratio or quota of itself, as it is exceeded: thus 6 is a geometrical medium between 4 and 9.

MEDIUM, in philosophy, that space or region thro' which a body in motion passes to any point: thus æther is supposed to be the medium through which the heavenly bodies move; air, the medium wherein bodies move near our earth; water, the medium wherein fishes live and move; and glass is also a medium of light, as it affords it a free passage. That density or consistency in the parts of the medium, whereby the motion of bodies in it is retarded, is called the *resistance of the medium*; which, together with the force of gravity, is the cause of the cessation of the motion of projectiles.

Subtile or Ætherial MEDIUM. Sir Isaac Newton considers it probable, that, beside the particular aerial medium, wherein we live and breathe, there is another more universal one, which he calls an *ætherial medium*; vastly more rare, subtile, elastic, and active, than air; and by that means freely permeating the pores and interstices of all other mediums, and diffusing itself through the whole creation; and by the intervention hereof he thinks it is that most of the great phenomena of nature are effected. See ÆTHER, ELECTRICITY, FIRE, &c.

MEDIUM, in optics, any substance through which light is transmitted.

MEDLAR, in botany. See MESPILUS.

MEDULLA OSSIIUM, or *MARROW of the Bones*. See ANATOMY, n° 5.

MEDULLA cerebri and cerebelli, denotes the white soft part of the brain and cerebellum, covered on the outside with the cortical substance, which is of a more dark or ashy colour. See ANATOMY, n° 131—133.

MEDULLA oblongata, is the medullary part of the brain and cerebellum, joined in one; the fore-part of it coming from the brain, and the hind-part from the cerebellum. See ANATOMY, n° 134.

It lies on the basis of the skull, and is continued thro' the great perforation thereof into the hollow of the vertebræ of the neck, back, and loins; though only so much of it retains the name *oblongata* as is included within the skull. After its exit thence, it is distinguished by the name of *medulla spinalis*. Ibid. n° 135.

MEDUSA (fab. hist.), one of the three Gorgons, daughter of Phorcys and Ceto. She was the only one of the Gorgons who was subject to mortality. She

is celebrated for her personal charms and the beauty of her locks. Neptune became enamoured of her, and obtained her favours in the temple of Minerva. This violation of the sanctity of the temple provoked Minerva; and she changed the beautiful locks of Medusa, which had inspired Neptune's love, into serpents, the sight of which turned the beholders into stones; but Perseus, armed with Mercury's ax with which he killed Argus, cut off Medusa's head, from whose blood sprang Pegasus and Chrysaor, together with the innumerable serpents that infest Africa. The conqueror placed Medusa's head on the ægis of Minerva, which he had used in his expedition; and the head still retained the same petrifying powers as before.

MEDUSA, in zoology, a genus of vermes, belonging to the order of mollusca. The body is gelatinous, roundish, and depressed; and the mouth is in the centre of the under part of the body. Many species, on being handled, affect with a nettle-like burning, and excite a redness. The ancients, and some of the moderns, add that they have an aphrodisiac property, and in several languages they are called by an obscene name. They were known to the Greeks and Romans by the names of Πνευμα θαλασσιον, and *pulmo marinus*, or sea-lungs. They attributed medicinal virtues to them. Dioscorides informs us, that, if rubbed fresh on the diseased part, they cured the gout in the feet, and kided heels. Ælian says, that they were depilatory; and, if macerated in vinegar, would take away the beard. Their phosphoric quality is well known; nor was it overlooked by the ancients. Pliny observes, that if rubbed with a stick it will appear to burn, and the wood to shine all over. The same naturalist observes, that when they sink to the bottom of the sea, they portend a continuance of bad weather.

On Plate CCXCIV, are figured several specimens, viz. 1. The aurita, or aurited medusa; which appears, as floating on the water, to be a mere lifeless lump of jelly. It is of a whitish colour, with a cast of bluish grey, and is of an orbiculated figure, elevated into a convexity in the middle on the upper side, flat on the under, and furnished with a fringe of fine and somewhat rigid filaments round the edge, resembling white hairs: on the under surface there are four cavities near the centre, each of an arcuated figure, and surrounded with an opaque line, formed of about 24 parallel points or dots: from the very centre of the under side there arise four crooked appendages, which have each a row of hairy filaments on the exterior edge; and on the upper surface there is an appearance of fine vessels of a pale colour. This species is frequent, floating on the surface of the sea, or adhering to rocks about our own coasts; and when the sun shines on them, they have a very beautiful lucid appearance. It is called by some the *sea nettle*, it being one of those animals that when touched occasions a very disagreeable tingling in the hands.

2. The capillata, or capillated medusa, is a very singular and odd animal: it seems a mere lump of a whitish semi-pellucid jelly; and is as easily broken and destroyed by a touch as the common jellies brought to our tables: its shape is rounded, rising into a convexity in the middle, where it is therefore thickest, and whence it becomes gradually thinner to the sides: on the under side it is plain, and on this there is visible a rough, or as it were echinated circle, within which

Medusa.

Fig. 3. n° 1.

Ibid. 3. n° 2.

Medusa,
Medway.

there run eight pairs of rays from the centre toward the circumference; and from the centre there arise also a number of curled appendages, which are sometimes reddish, but more usually whitish, and a vast number of slender filaments: the edge or the circumference of the body is regularly divided into eight portions, and each of them is emarginated, so that on the whole verge there are 16 sinuses. This species is to be met with in vast abundance floating on the surface of the water about Sheppey island in Kent, and elsewhere on that coast: great quantities of it are destroyed by being thrown on shore with the waves, whence it has no power of getting off again; and in the open seas, many fish skim near the surface, and prey on them. This is the species called by many authors *pulmo marinus*, or the sea lungs. 3. The marfupialis, or purse medusa, is semi-oval, with four tentacula on the edge. It inhabits the Mediterranean.

Fig. 3. n° 3.

Ibid. n° 4.

4. The waved medusa has the edges waved, with fangs on the projecting parts; four orifices beneath, between which rises a stem divided into eight large ragged tentacula.

These animals swim in large companies in search of food, with their tentacula in continual motion, with which they seize their prey, and convey it to their mouths: they vary in size, the largest being generally about eight inches in diameter. They vary likewise in the number of their tentacula; some having only two, others four, six, and some eight, but they rarely exceed that number. So powerful is their embrace, that whatever prey comes within their reach never escapes. They subsist on insects, small fish, &c.

Mr Banks, in his passage from Madeira to Rio de Janeiro, discovered a new species, which, when brought aboard by the casting net, had the appearance of metal violently heated, and emitted a white light. With these animals were taken small crabs of three different species, altogether new, each of which gave as much light as the glow-worm, though the creature was not so large by nine-tenths. These luminous animals are one of the causes of that appearance to the sea which has been mentioned by many navigators, and of which various reasons have been assigned. It appeared to emit flashes of light exactly resembling those of lightning, only not so considerable, but so frequent, that sometimes eight or ten were visible at the same moment.

MEDWAY, a river of England, rises in the Weald of Sussex, and entering Kent near Ashurst, runs by Tunbridge, and thence continues its course towards Maidstone. It is navigable for large ships to Rochester bridge, and thence for vessels and barges to Maidstone, the tide flowing up to that town. The distance between the mouth of this river, where the fort at Sheerness is erected, and Rochester bridge, is between 16 and 18 miles. In this part of the river, the channel is so deep, the banks so soft, and the reaches so short, that it is one of the best and safest harbours in the world; and ships of 80 guns ride afloat at low-water, within musket-shot of Rochester-bridge. Nor is there a single instance upon record, that any of the royal navy ever suffered here by storms, except in that dreadful tempest which happened in November 1703, when the Royal Catharine was driven on shore, where she sunk and was lost. On the shore of this river are

two castles, one at Upnor, which guards two reaches of the river, and is supposed to defend all the ships which ride above, between that and the bridge; on the other side of the river is Gillingham castle, built for the same purpose, and well furnished with cannon which commands the river. Besides these, there is a platform of guns at a place called the Swam, and another at Cockham-wood. But the principal fortification on this river is the castle at Sheerness.

MEEREN, or MEER, (John Vander,) called the *Old*, an esteemed painter, was born in 1627; but the master, under whom he learned the art of painting, is not mentioned. His genius directed him to choose for his subjects sea-pieces, landscapes, and views of the sea and its shores; which he painted with great truth, as he had accustomed himself to sketch every scene after nature. The situations of his landscapes are agreeably chosen, frequently they are solemn, and generally pleasing. The forms of his trees are easy and natural, his distances well observed, and the whole scenery has a striking effect, by a happy opposition of his lights and shadows. He also very often painted battles in such a style as met with approbation; as they showed good composition, were touched with spirit, and had a great deal of transparence in the colouring. But the fault imputable to Vander Meer is, that in some of his pictures the back-grounds are a little too blue, and that some of his landscapes have a tint which appears rather too yellowish. He died in 1690.

MEEREN, or MEER, (John Vander), called *De Jonghe*, an eminent landscape-painter, is supposed to have been the son of the old John Vander Meer, and of whom he learned the first rudiments of the art; but being in his youth deprived of his instructor before he had made any great progress, he became a disciple of Nicholas Berghem, and was accounted the best of those who were educated in the school of that admired master. In the manner of his master, he painted landscapes and cattle; and his usual subjects are cottages, with peasants at their rural occupations and diversions. It is observed of him, that he very rarely introduced cows, horses, or any other species of animals, except goats and sheep; the latter of which are so highly finished, that one would imagine the wool might be felt by the softness of its appearance. His touch is scarce perceptible, and yet the colours are admirably united. He died in 1688. The genuine works of this Vander Meer bear a very high price, and are esteemed even in Italy, where they are admitted into the best collections; but the scarcity of them has occasioned many moderate copies after his works to be passed on the undiscerning for real originals.

MEGALE POLIS, (anc. geog.) dividedly (Ptolemy, Pausanias); or conjunctly *Megalopolis*, (Strabo): A town of Arcadia, built under the auspices of Epaminondas, after the battle of Leuctra; many inconsiderable towns being joined together in one great city, the better to withstand the Spartans. It was the greatest city of Arcadia, according to Strabo.

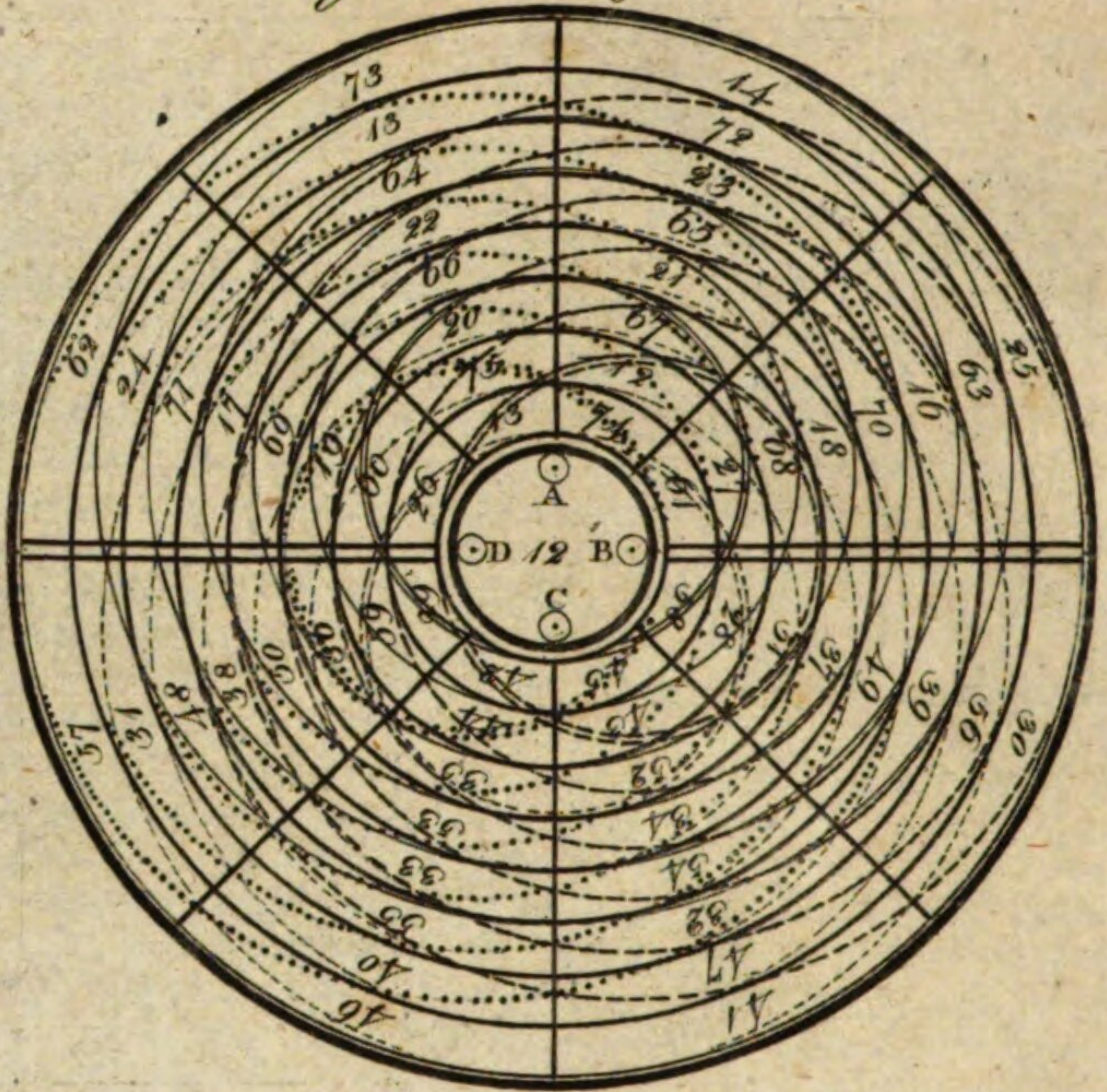
MAGALESIA, and MEGALENSES LUDI, feasts and games in honour of Cybele or Rhea the mother of the gods, kept on the 12th of April by the Romans, and famous for great rejoicings and diversions of various sorts. The Galli carried the image of the goddess along the city, with sound of drums and other music,

Meeren
||
Magalesia.

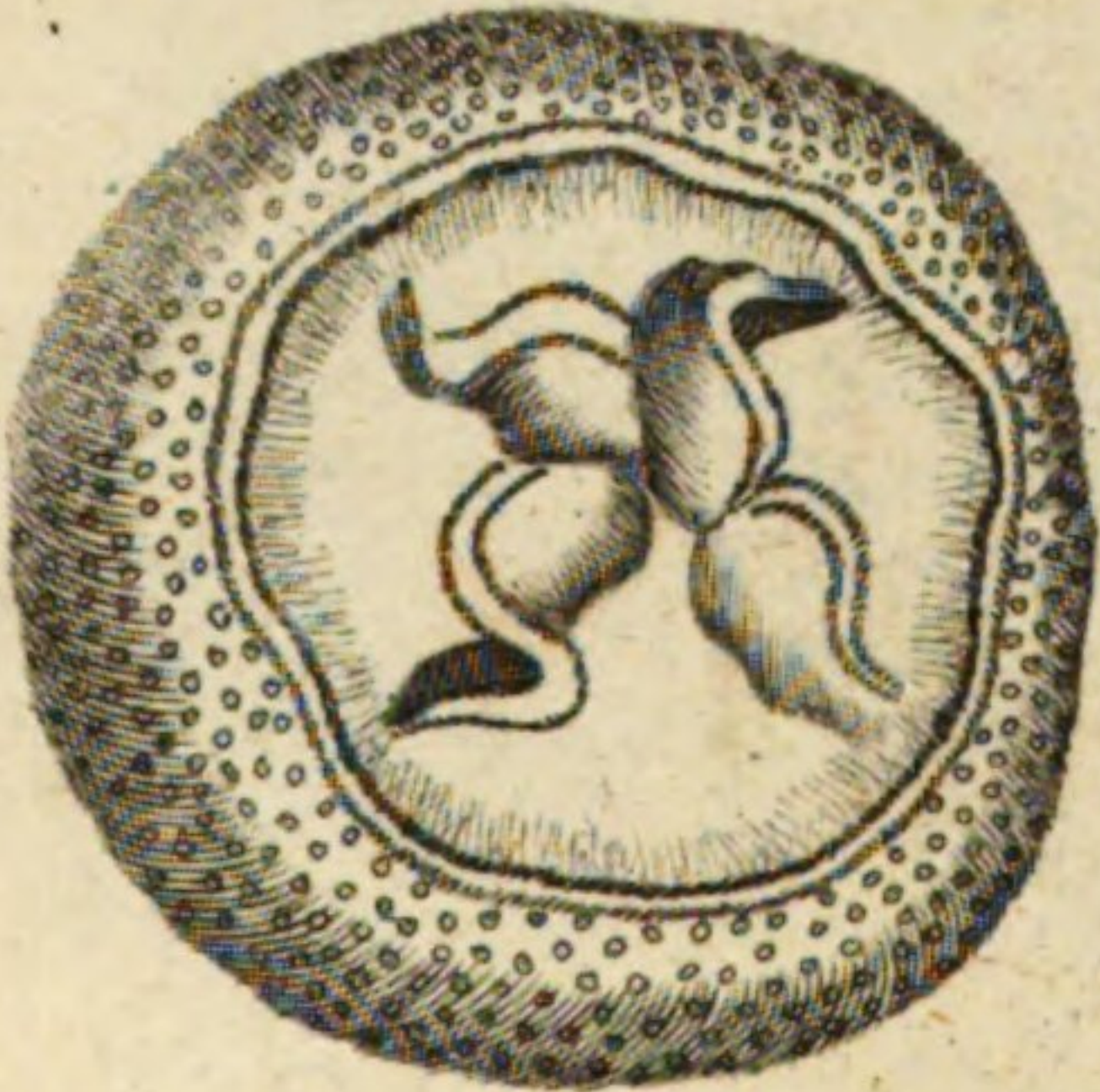
Magic Square of Squares.

200	217	232	249	8	25	40	57	72	89	104	121	136	153	168	181
58	39	26	7	250	231	218	199	186	167	154	135	122	103	90	71
198	219	230	251	6	27	38	59	70	91	102	123	134	155	166	187
60	37	28	5	252	229	220	197	188	165	156	133	124	101	92	69
201	216	233	248	9	24	41	56	73	88	105	120	137	152	160	184
55	42	23	10	247	234	215	202	183	170	151	138	119	106	87	74
203	214	235	246	11	22	43	54	75	86	107	118	139	150	171	182
53	44	21	12	245	236	213	204	181	172	149	140	117	108	85	76
205	212	237	244	13	20	45	52	77	84	109	116	141	148	173	180
51	46	19	14	243	238	211	200	179	174	147	132	115	110	83	78
207	210	239	242	15	18	47	50	79	82	111	114	143	146	175	178
49	48	17	16	241	240	209	208	177	176	145	144	113	112	81	80
196	221	228	233	4	29	36	61	68	93	100	125	132	157	164	189
92	35	30	3	254	227	222	195	190	163	158	131	126	99	94	67
194	223	226	235	2	31	34	63	66	95	98	127	130	159	162	191
64	33	32	1	256	225	224	193	192	161	160	129	128	97	96	65

Magic Circle of Circles.



N.º 1.



Medusa N.º 2.



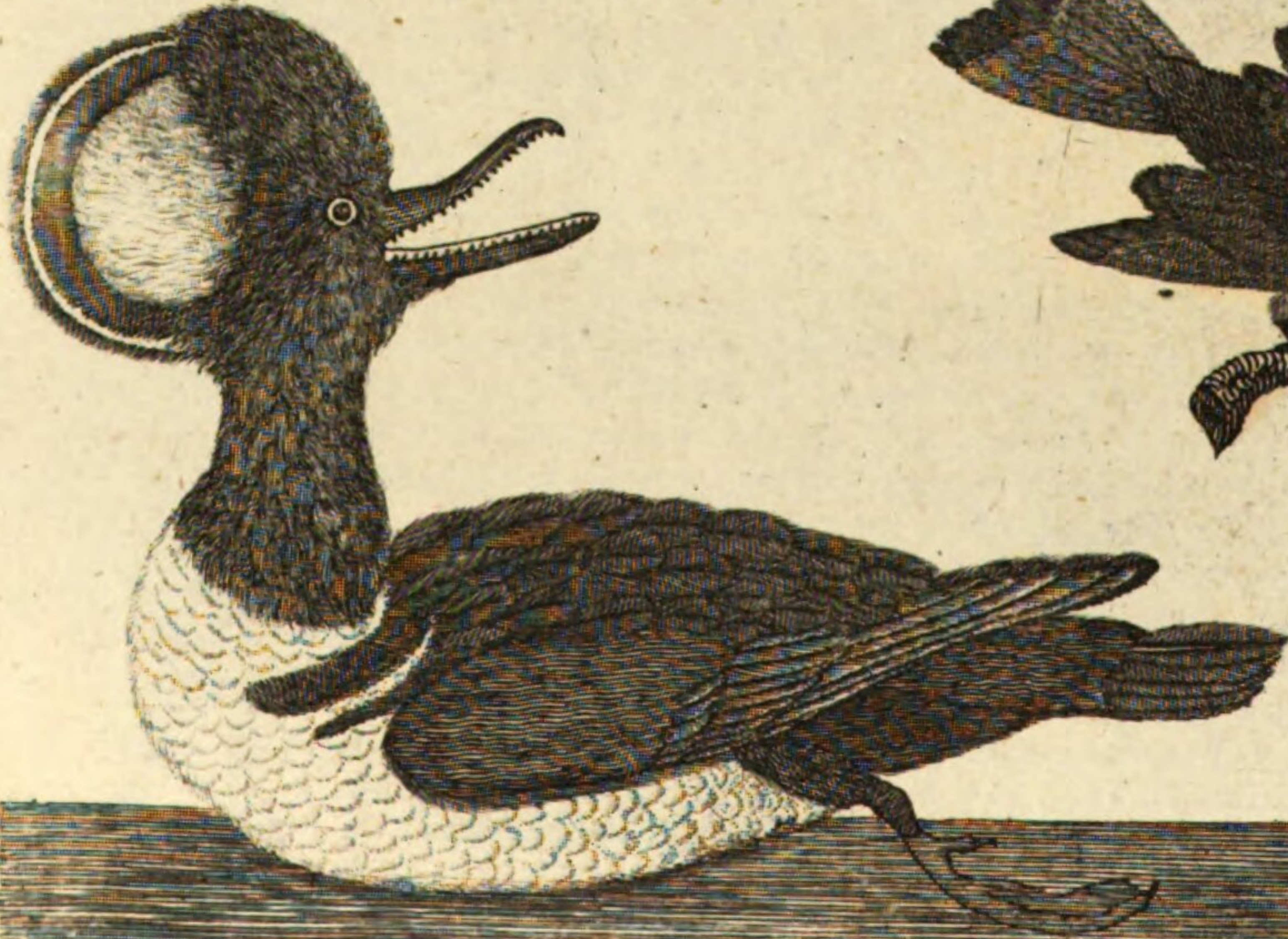
N.º 4.



Meloc.



Mergus cucullatus.



Merops, A.



Merops, B.



Megara. music, in imitation of the noise they made to prevent Saturn from hearing the cries of his infant son Jupiter, when he was disposed to devour him.

MEGARA (anc. geog.), a noble city, and the capital of the territory of Megaris, which for many years carried on war with the Corinthians and Athenians. It had for some time a school of philosophers, called the *Megarici*, successors of Euclid the Socratic, a native of Megara. Their dialect was the Doric; changed from the Attic, which it formerly had been, because of Peloponnesian colonists who settled there.

Megara was situated at a distance from the sea. Its port was called *Nisæa*, from Nisus son of Pandion the second, who obtained the Megaris for his portion, when the kingdom of Athens was divided into four lots by his father. He founded the town, which was eighteen stadia or two miles and a quarter from the city, but united with it, as the Piræus with Athens, by long walls. It had a temple of Ceres. "The roof (says Pausanias) may be supposed to have fallen through age." The site (as Dr Chandler informs us †) is now covered with rubbish, among which are standing some ruinous churches. The place has been named from them *Dode Ecclesiæ*, "The Twelve Churches;" but the number is reduced to seven. The acropolis or citadel, called also *Nisæa*, was on a rock by the sea-side. Some pieces of the wall remain, and a modern fortress has been erected on it, and also on a lesser rock near it.

The village Megara (continues the Doctor) consists of low mean cottages, pleasantly situated on the slope of a brow or eminence indented in the middle. On each side of this vale was an acropolis or citadel; one named Caria; the other from Alcathous, the builder of the wall. They related, that he was assisted by Apollo, who laid his harp aside on a stone, which, as Pausanias testifies, if struck with a pebble returned a musical sound. An angle of the wall of one citadel is seen by a wind-mill. The masonry is of the species called Incertum. In 1676 the city-wall was not entirely demolished, but comprehended the two summits, on which are some churches, with a portion of the plain toward the south. The whole site, except the hills, was now green with corn, and marked by many heaps of stones, the collected rubbish of buildings. A few inscriptions are found, with pedestals fixed in the walls and inverted; and also some maimed or mutilated statues. One of the former relates to Atticus Herodes, and is on a pedestal which supported a statue erected to him when consul, A. D. 143. by the council and people of Megara, in return for his benefactions and good-will toward the city. In the plain behind the summits, on one of which was a temple of Minerva, is a large basin of water, with scattered fragments of marble, the remains of a bath or of a fountain, which is recorded as in the city, and remarkable for its size and ornaments, and for the number of its columns. The spring was named from the local nymphs called Sithnides.

The stone of Megara was of a kind not discovered any where else in Hellas; very white, uncommonly soft, and consisting entirely of cockle-shells. This was chiefly used; and, not being durable, may be reckoned among the causes of the desolation at Megara, which is so complete, that one searches in vain for vestiges of

the many public edifices, temples, and sepulchres, which once adorned the city.

Megara was engaged in various wars with Athens and Corinth, and experienced many vicissitudes of fortune. It was the only one of the Greek cities which did not re-flourish under their common benefactor Hadrian; and the reason assigned is, that the avenging anger of the gods pursued the people for their impiety in killing Anthemocritus, a herald, who had been sent to them in the time of Pericles. The Athenian generals were sworn on his account to invade them twice a-year. Hadrian and Atticus were followed by another friend, whose memory is preserved by an inscription on a stone lying near a church in the village:—"This too is the work of the most magnificent count Diogenes son of Archelaus, who regarding the Grecian cities as his own family, has bestowed on that of the Megarensians one hundred pieces of gold toward the building of their towers, and also one hundred and fifty more with two thousand two hundred feet of marble toward re-edifying the bath; deeming nothing more honourable than to do good to the Greeks, and to restore their cities." This person is not quite unnoticed in history. He was one of the generals employed by the emperor Anastasius on a rebellion in Isauria. He surprised the capital Claudiopolis, and sustained a siege with great bravery, A. D. 494.

Megara retains its original name. It has been much infested by corsairs; and in 1676 the inhabitants were accustomèd, on seeing a boat approach in the day time or hearing their dogs bark at night, immediately to secrete their effects and run away. The Vaiswode or Turkish governor, who resided in a forsaken tower above the village, was once carried off. It is no wonder, therefore, that Nisæa has been long abandoned. The place was burned by the Venetians in 1687.

MEGARA (anc. geog.) formerly called *Hybla*, a town towards the east coast of Sicily; extinct in Strabo's time, though the name Hybla remained on account of the excellence of its honey. It was a colony of Megareans from Greece. *Rifus Megaricus* denotes a hoarse-laugh.

MEGARIS (anc. geog.), the country of the Megareans, is described as a rough region, like Attica; the mountain called *Oneian* or the *Afinine*, now *Macriplayi* or "the long Mountain," extending through it toward Bœotia and mount Cithæron. It belonged to Ionia or Attica, until it was taken by the Peloponnesians in the reign of Codrus, when a colony of Dorians settled in it. This territory had Attica to the east, Bœotia to the north and west, and the Isthmus of Corinth to the south.

MEGARIS, a small island in the Tuscan sea, joined to Naples by a bridge. Now called *Castello dell'Ovo*.

MEGASTHENES, a Greek historian in the age of Seleucus Nicanor, about 300 years before Christ. He wrote about the oriental nations, and particularly the Indians. His history is often quoted by the ancients. What now passes as his composition is spurious.

MEGIDDO (anc. geog.), a town of Galilee, recited (Joshua xvii. 11.) among the cities of Manasseh, in the tribe of Issachar or Asser, on the west side of Jordan. Famous for the defeat of Ahaziah and Josiah, who perished there (2 Kings xxiii. 29.): near it was

Megara
||
Megiddo.

Travels in
Greece, 192.

Melbomias—an open plain, fit for drawing up an army in battle array. It was situated to the north, contrary to its position in the common maps. The Canaanites, being tributary to the Israelites, dwelt in it, Joshua xvii.—It was rebuilt by Solomon, 1 Kings ix.

MEIBOMIUS, the name of several learned Germans.—*John Henry Meibomius* was professor of physic at Helmstadt, where he was born, and at Lubec; he wrote the *Life of Mæneas*, published at Leyden in 4to, 1653, with several other learned works. *Henry*, his son, was born at Lubec in 1638; became professor of physic at Helmstadt; and, besides works in his own profession, published *Scriptores rerum Germanicarum*, 3 vol. folio, 1688; a very useful collection, first begun by his father.—*Marcus Meibomius*, of the same family, published a collection of seven Greek authors who had written upon ancient music, with a Latin version by himself; dedicated to Queen Christina of Sweden, who invited him to her court. But she engaging him one day to sing an air of ancient music, while somebody was ordered to dance to it, the immoderate mirth which this occasioned in the spectators so disgusted him, that he immediately left the court of Sweden. His edition of the Greek mythologists, and notes upon Diogenes Laertius in Menage's edition, show him to have been a man of learning; but he suffered no little raillery for his attempt to correct the Hebrew text of the Bible, by a kind of metre he fancied he had found out in those ancient writings.

MEISSEN, a considerable town of Germany, in the electorate of Saxony, and in the margravate of Misnia, with a castle. It formerly belonged to the bishop, but is now secularized, and the inhabitants are Lutherans. In this place is a famous manufactory of porcelain. E. Long. 13. 33. N. Lat. 51. 15.

MEL, HONEY, in the materia medica. See HONEY.

MELA (Pomponius), an ancient Latin writer, was born in the province of Bætica in Spain, and flourished in the reign of the emperor Claudius. His three books of Cosmography, or *De situ orbis*, are written in a concise, perspicuous, and elegant manner; and have been thought worthy of the attention and labours of the ablest critics. Isaac Vossius gave an edition of them in 1658, 4to, with very large and copious notes. To this edition is added, *Julii Honorii oratoris excerptum cosmographiae*, first published from the manuscript, and *Æthici cosmographia*. Gronovius afterwards published another edition with illustrations by medals. In his last edition are added five books, *De Geographia*, written by some later author; by Jornandes, as Fabricius conjectures.

MELÆNE, or BLACK FLUX, in medicine. See MEDICINE, n° 409.

MELALEUCA, in botany; a genus of the polyandria order, belonging to the polydelphia class of plants. The calyx is quinquepartite, superior; the corolla pentapetalous; the filaments are very numerous, and collected in such a manner as to form five pencils; there is one style; the capsule is half-covered with the calyx, formed like a berry, and is trivalved and trilocular.—This plant has already been noticed under the article (mis-spelt) MALALEUCA; where also, by mistake, it was said that there is only one species.—The species are five, natives of India and the South

Sea islands. The most remarkable species is the **LEUCADENDRON**, from a variety of which (the *latifolia*, or broad-leaved leucadendron) the Cajeput oil is obtained: a medicine in very high esteem among the eastern nations, particularly in India. It is said to be obtained by distillation from the fruit of the tree. When brought into this country, it is a liquid of a greenish colour, of a fragrant but at the same time a very peculiar odour, and of a warm pungent taste. Some authors, however, represent this oil as being, when of the best quality, a white or colourless fluid; and it has been said by the authors of the *Dispensatorium Brunsvicensis*, when prepared in Europe from the seeds sent from India, to be entirely of this appearance. Hitherto the oleum cajeput has been but little employed either in Britain or on the continent of Europe; but in India it is used both internally and externally, and is highly extolled for its medical properties. It is applied externally where a warm and peculiar stimulus is requisite; it is employed for restoring vigour after luxations and sprains, and for easing a violent pain in gouty and rheumatic cases, in tooth-ach, and similar affections; but it has been chiefly celebrated as taken internally, and it is particularly said to operate as a very powerful remedy against tympanitic affections.

MELAMPODIUM, a name given to black hellebore. See HELLEBORUS.

MELAMPodium, in botany: A genus of the polygamia necessaria order, belonging to the syngenesia class of plants; and in the natural method ranking under the 49th order, *Compositæ*. The receptacle is palæaceous and conical; the pappus is monophyllous and valve-like; the calyx pentaphyllous.

MELAMPUS (fab. hist.), a celebrated soothsayer and physician of Argos, son of Amythaon and Idomeneia or Dorippe. He lived at Pylos in Peloponnesus. His servants once killed two large serpents who had made their nests at the bottom of a large oak; and Melampus paid so much regard to their remains, that he raised a burning pile and burned them upon it. He also took particular care of their young ones, and fed them with milk. Some time after this, the young serpents crept to Melampus as he slept on the grass near the oak; and, as if sensible of the favours of their benefactor, they wantonly played around him, and softly licked his ears. This awoke Melampus, who was astonished at the sudden change which his senses had undergone. He found himself acquainted with the chirping of the birds, and with all their rude notes, as they flew around him. He took advantage of this supernatural gift, and soon made himself perfect in the knowledge of futurity, and Apollo also instructed him in the art of medicine. He had soon after the happiness of curing the daughters of Prætus, by giving them hellebore, which from that circumstance has been called *melampodium*; and as a reward for his troubles, he married the eldest of these princesses. The tyranny of his uncle Neleus, king of Pylos, obliged him to leave his native country; and Prætus, to show himself more sensible of his services, gave him part of his kingdom. About this time the personal charms of Pero, the daughter of Neleus, had gained many admirers; but the father promised his daughter only to him who brought into his hands the oxen of Iphiclus. This condition displeased many; but Bias, who was also one of her admirers,

Melampo-
dium,
Melampus,

Melampyrum
||
Melancthon.

mirers, engaged his brother Melampus to steal the oxen and deliver them to him. Melampus was caught in the attempt, and imprisoned; and nothing but his services as a soothsayer and physician to Iphiclus would have saved him from death. All this pleaded in the favour of Melampus; but when he had taught the childless Iphiclus how to become a father, he not only obtained his liberty, but also the oxen; and with them he compelled Neleus to give Pero in marriage to Bias. A severe distemper, which had rendered the women of Argos insane, was totally removed by Melampus; and Anaxagoras, who then sat on the throne, rewarded his merit by giving him part of his kingdom, where he established himself, and where his posterity reigned during six successive generations. He received divine honours after death, and temples were raised to his memory.

MELAMPYRUM, COW-WHEAT: A genus of the angiospermia order, belonging to the didynamia class of plants; and in the natural method ranking under the 40th order, *Personate*. The calyx is quadrifid; the upper lip of the corolla is compressed, with the edges folded back; the capsule is bilocular and oblique, opening at one side; there are two gibbous seeds. There are four species, all of them natives of Britain, and growing spontaneously among corn-fields. They are excellent food for cattle; and Linnæus tells us, that where they abound the yellowest and best butter is made. Their seeds, when mixed with bread, give it a dusky colour; and, according to some authors, produce a vertigo, and other disorders of the head; but this is denied by Mr Withering, though he allows that they give it a bitter taste.

MELANCHOLY, a kind of delirium attended with gloomy thoughts, heaviness, and sorrow. See **MEDICINE**, n° 85, 327.

MELANCTHON (Philip), born at Bretten in the Palatinate in 1495, was one of the wisest and most able men of his age among the Reformers, though of a mild temper, and disposed to accommodate rather than to inflame disputes. In his youth he made an admirable progress in learning, and was made Greek professor at Wirtemberg in 1509. Here his lectures upon Homer, and the Greek text of St Paul's Epistle to Titus, drew to him a great number of auditors, and entirely effaced the contempt to which his low stature and mean appearance had exposed him. Melancthon reduced the sciences to systems; and acquired such reputation, that he had sometimes 2500 auditors. He soon entered into an intimate friendship with Luther, who taught divinity in the same university; and in 1519 they went together to Leipzig, to dispute with Eccius. The following years he was continually engaged in various employments; he composed several books; he taught divinity; took several journeys, in order to found colleges and visit churches; and in 1530 drew up a confession of faith, which goes by the name of the *Confession of Augsburg*, because it was presented to the emperor at the diet held in that city. All Europe was convinced, that he was not, like Luther, backward to accommodate the differences between the various sects of Christians. He hated religious disputes, and was drawn into them only through the necessity of the part he was called to act in the world; and therefore would have sacrificed many

things to have produced an union among the Protestants. For this reason, Francis I. the French king, wrote to desire him to come and confer with the doctors of the Sorbonne, in order to agree with them about putting an end to all controversies; but though Luther endeavoured to persuade the elector of Saxony to consent to that journey, and though Melancthon himself desired it, that prince, whether he distrusted Melancthon's moderation, or was afraid of quarrelling with the emperor Charles V. would never grant his permission. The king of England also in vain desired to see him. Melancthon, in 1529, assisted at the conferences of Spires. In 1541, he was at the famous conferences at Ratisbon. In 1543, he went to meet the archbishop of Cologne to assist him in introducing the reformation into his diocese; but that project came to nothing: and in 1548, he assisted at seven conferences on the subject of the interim of Charles V. and wrote a censure on that interim, and all the writings presented at these conferences. He was extremely affected at the dissensions raised by Flaccus Illyricus. His last conference with those of the Roman communion was at Worms, in 1557. He died at Wittemburg in 1560, and was interred near Luther. Some days before he died, he wrote upon a piece of paper the reasons which made him look upon death as a happiness; and the chief of them was, that it "delivered him from theological persecutions." Nature had given Melancthon a peaceable temper, which was but ill suited to the time he was to live in. His moderation served only to be his cross. He was like a lamb in the midst of wolves. Nobody liked his mildness; it looked as if he was lukewarm; and even Luther himself was sometimes angry at it.

Melancthon was a man in whom many good as well as great qualities were wonderfully united. He had great parts, great learning, great sweetness of temper, moderation, contentedness, and the like, which would have made him very happy in any other times but those in which he lived. He never affected dignities, or honours, or riches, but was rather negligent of all these things; too much so in the opinion of some, considering he had a family; and his son-in-law Sabinus, who was of a more ambitious make, was actually at variance with him upon this very article. Learning was infinitely obliged to him on many accounts; on none more than this, that, as already observed, he reduced almost all the sciences which had been taught before in a vague irregular manner, into systems. Considering the distractions of his life, and the infinity of disputes and tumults in which he was engaged, it is astonishing how he could find leisure to write so many books. Their number is prodigious, inasmuch that it was thought necessary to publish a chronological catalogue of them in the year 1582. His works indeed are not correct, and he himself owned it: but as he found them useful, he chose rather to print a great number, than to finish only a few; "which however (as Bayle says) was postponing his own glory to the advantage of others." His constitution was very weak, and required great tenderness and management; which made Luther, as hot and zealous as he was, blame him for labouring too earnestly in the vineyard.

MELANIPPIDES,

Melancthon.

Melanippi-
des
||
Melchites.

MELANIPPIDES, (fab. hist.), a Greek poet about 520 years before Christ. His grandson of the same name flourished about 60 years after at the court of Perdiccas the Second, of Macedonia. Some fragments of their poetry are still extant.

MELANTERIA, in natural history, a very beautiful fossil, of a dense, compact, and regular texture, and of an extremely bright pale yellow, resembling nothing so much as the purest gold. It is remarkably heavy; and is sometimes found in little irregular masses of the bigness of a pigeon's egg, which are broken with a slight blow: but it is usually met with in the form of a fine gold-coloured efflorescence on vitriolic and pyritical bodies; or in loose, shattery, and friable masses of a more dusky yellow; in which latter state it so much resembles a native sulphur, that it is frequently mistaken for one; however, it is not inflammable; but calcines in the fire to a greyish powder, which by burning longer changes to a deep and fine purple.

The Greeks used it externally as a gentle escharotic and a styptic: they made it an ingredient in their ointments for old ulcers, and used to sprinkle the powder of it on fresh wounds in order to stop the hæmorrhagy.

MELASSES. See **MOLASSES**.

MELASTOMA, the **AMERICAN GOOSEBERRY-TREE**, in botany: A genus of the monogynia order, belonging to the decandria class of plants; and in the natural method ranking under the 17th order, *Calycanthemæ*. The calyx is quinquefid and campanulated; the petals are five, inserted into the calyx; the berry is quinquelocular, and wrapped in the calyx.—There are a great many species, all of them natives of the warm parts of America, and very beautiful on account of the variegation of their leaves. Most of the leaves are of two different colours on their surfaces; the under side being either white, gold-coloured, or russet, and their upper parts of different shades of green; so that they make a fine appearance in the hot-house all the year round. There are but few of these plants in the European gardens; which may perhaps have been occasioned by the difficulty of bringing over growing plants from the West Indies; and the seeds being small when taken out from the pulp of their fruits, rarely succeed. The best way is to have the entire fruits put up in dry sand as soon as they are ripe, and forwarded by the quickest contrivance to England. They should be immediately taken out when they arrive, and the seeds sown in pots of light earth, and plunged into a moderate hot-bed of tanner's bark. When the plants come up, and are fit to be removed, they must each be planted in a small pot, and plunged into the tan-bed; and afterwards treated as other exotic plants.

MELCHA, a small village of Barbary, situated about 30 miles from the city of Tunis, built on the ruins of **CARTHAGE**, some of which are still visible.

MELCHITES, in church-history, the name given to the Syriac, Egyptian, and other Christians of the Levant. The Melchites, excepting some few points of little or no importance, which relate only to ceremonies and ecclesiastical discipline, are in every respect professed Greeks; but they are governed by a parti-

Nº 210.

cular patriarch, who resides at Damas, and assumes the title of *patriarch of Antioch*. They celebrate mass in the Arabian language. The religious among the Melchites follow the rule of St Basil, the common rule of all the Greek monks. They have four fine convents distant about a day's journey from Damas, and never go out of the cloister.

MELCHISEDEC, or **MELCHIZEDEK**, king of Salem, and priest of the Most High. The scripture tells us nothing either of his father, or of his mother, or of his genealogy, or of his birth, or of his death. And in this sense he was a figure of Jesus Christ, as St Paul affirms, who is a priest for ever, according to the order of Melchisedec, and not according to the order of Aaron, whose original, life, and death, are known. When Abraham returned from pursuing the four confederate kings, who had defeated the kings of Sodom and Gomorrah, and had taken away Lot Abraham's nephew along with them (Gen. xiv. 17, 18, 19, &c.), Melchisedec came to meet Abraham as far as the valley of Shaveh, which was afterwards named the king's valley, presented him with the refreshment of bread and wine (or he offered bread and wine in sacrifice to the Lord, for he was a priest of the most high God), and blessed him. Abraham, being desirous to acknowledge in him the quality of priest of the Lord, offered him the tythes of all he had taken from the enemy. After this time, there is no mention made of the person of Melchisedec; only the Psalmist (cx. 4.) speaking of the Messiah, says, "Thou art a priest for ever after the order of Melchisedec." St Paul, in his epistle to the Hebrews, unfolds the mystery which is concealed in what is said of Melchisedec in the Old Testament. See Heb. v. 6—10. An infinite number of difficulties and scruples have been started upon the subject of Melchisedec.—St Jerom thought that Salem, of which Melchisedec was king, was not Jerusalem, but the city of Salem near Scythopolis, where they still pretended to show the ruins of the palace of this prince. The greatness and extent of these ruins are a sufficient proof of the magnificence of this ancient building. He thinks it was at this city of Salem or Shalem, that Jacob arrived after his passage over Jordan, at his return from Mesopotamia (Gen. xxxiii. 18.) Some believe that Salem, where Melchisedec reigned, is the same as Salim spoken of in the gospel of St John, chap. iii. 23. From the time of Epiphaneus there were names invented for the father and mother of Melchisedec. To his father was given the name of Heraclas or Heracles, and to his mother that of Ashtaroth or Astartia. It is generally agreed on by the learned, that when the apostle says, he was "without father and without mother," no more is meant, than that he is introduced into the history of Abraham without acquainting us who he was, or whence he came, where he lived, or when he died. Nevertheless, some have taken St Paul's word's literally, and contended that he was not of human but divine nature. Origen and Didymus took him to be an angel; and the author of the *Questions upon the Old and New Testament* pretends, that he was the Holy Ghost, who appeared to Abraham in a human form. The Arabic Catena, upon the ninth chapter of Genesis, makes Melchisedec to be descended from Shem by his father, and from Japheth by his mother.

Melchisedec.

mother. Heraclas or Heraclim his father, was, they say, son or grandson of Phaleg, and son of Heber; and his mother named Salathiel, was daughter of Gomer son of Japheth. Cedrenus and others derive Melchisedec from an Egyptian stock. They say his father was called Sidon or Sida, and was the founder of the city of Sidon the capital of Phœnicia. Suidas says he was of the cursed race of Canaan; for which reason the scripture does not mention his genealogy. The Jews and Samaritans believed Melchisedec to be the same with the patriarch Shem; which opinion has been followed by a great number of modern writers. M. Jurieu has undertaken to prove that he is the same as Cham or Ham. It would be endless to set down all the opinions upon this matter: therefore we shall only add, that Peter Cunæus and Peter du Moulin have asserted, that Melchisedec who appeared to Abraham was the Son of God, and that the patriarch worshipped him and acknowledged him for the Messiah.

About the beginning of the third century arose the heresy of the Melchisedecians, who affirmed that Melchisedec was not a man, but a heavenly power, superior to Jesus Christ: for Melchisedec, they said, was the intercessor and mediator of the angels, but Jesus Christ was so only for men, and his priesthood only a copy of that of Melchisedec, who was the Holy Ghost.

We shall only beg leave to add here one opinion more concerning Melchisedec, which is that of the learned Heidegger, who, as the author of the *Hist. Patriar.* thinks, has taken the right method of explaining the accounts of Moses and the apostle Paul relating to this extraordinary person. He supposes a twofold Melchisedec; the one historical, whereof Moses gives an account in the xivth chapter of Genesis, as that he was king as well as high-priest of Jerusalem; the other allegorical, whom St Paul describes, and this allegorical person is Jesus Christ.

As the history of this prince and priest is so little known, it is no wonder, as Selden observes, that many fabulous accounts have been invented of him; of which the following may suffice as a specimen. Eutychus patriarch of Alexandria relates, that the body of Adam having been embalmed according to his order, was deposited in a cave under a mountain of the children of Seth; but that Adam before his death had commanded that they should take away his remains from that place, and transport them to the middle of the earth: that Noah, to follow the orders of his ancestors, had preserved the bodies of Adam and all the patriarchs with him in the ark: that finding himself near his death, he ordered his son Shem to take the body of Adam, to furnish himself with bread and wine for his journey, to take with him Melchisedec the son of Phaleg, and to go to the place in which an angel would show them where to bury the first man: that Noah added this order, "Command Melchisedec to fix his residence in that place, and to live unmarried all his lifetime, because God has chosen him to do service in his presence; command him, that he build no temple, nor shed the blood of birds, nor four-footed beasts, or any other animal; and that he offer no other oblations to God but bread and wine." This is the reason, according to this author, why Melchisedec,

Vol. XI. Part I.

when he met Abraham, brought forth only bread and wine.

A Greek author, under the name of Athanasius, relates, that Melchisedec was the son of an idolatrous king called Melchi and of a queen called Salem.—Melchi, having resolved to offer a sacrifice to the gods, sent his son Melchisedec to fetch him seven calves. In the way the young prince was enlightened by God, and immediately returned to his father, to demonstrate to him the vanity of his idols. Melchi, in wrath, sent him back to fetch the victims. While he was absent, the king sacrificed his eldest son, and a great many other children, to his gods. Melchisedec returning, and conceiving great horror at this butchery, retired to mount Tabor, where he lived seven years, without clothes, and fed only on wild fruits. At the end of seven years, God appeared to Abraham, bid him go up to mount Tabor, where he should find Melchisedec. He ordered him to cloath him, and to ask his blessing; which Abraham having done, Melchisedec anointed him with oil, and they came down together from the mountain.

MELCOMB-REGIS, a town of Dorsetshire, in England, 130 miles from London, is situated at the mouth of the river Wey, by which it is parted from Weymouth. It appears from the name to have been anciently the king's demesne, and from the records to have paid quit-rent to the crown all along after king Edward I. till it was bought off by the inhabitants before they were united to Weymouth. It lies on the north side of the haven, on a peninsula surrounded by the sea on all sides except on the north. The streets are broad and well paved, and many of the houses large and high. It sent members to parliament in the reign of king Edward I. before Weymouth had that privilege. It was by parliament appointed a staple in the reign of Edward III. In the next reign the French burnt it; and it was thereby rendered so desolate, that the remaining inhabitants prayed and obtained a discharge from customs. On account of its quarrels with Weymouth, in the reign of Henry VI. its privileges as a port were removed to Pool: but in that of queen Elizabeth they were restored to it by act of parliament, which was confirmed in the next reign, on condition that Melcomb and Weymouth should make but one corporation, and enjoy their privileges in common; and to this was owing the flourishing state of both. In the two reigns last mentioned, a wooden bridge with seventeen arches was built from hence to Weymouth; to which, as well as its church, the chief contributors were certain citizens of London; and upon its decay it was rebuilt in 1770. Here is a good market-place and town-hall, to which the members of the corporation of Weymouth come to attend public business, as the inhabitants do to its church for public worship. For several years past the sea has retired from it on the east, the priory formerly being bounded by the sea; but there is now a street beyond it, from which it is several paces to the high-water mark. The priory was situated in the east part of the town, in Maiden-street, whose site occupied about an acre, now covered with tenements. On the south side are the remains of the chapel, now converted into a malt-house. Near it are the remains of an

3 A

ancient

Melchisedec,
Melcomb-regis.

Meldæ.
Meleager.

ancient building, formerly a nunnery. Here are three meeting-houses and a work-house for the poor. The church, which is in the middle of the town, has a wooden turret for a bell, and had been an old chapel. It was rebuilt in 1605, and made parochial, and is a handsome fabric, with a beautiful altar-piece painted and given by Sir James Thornhill. The port, which generally goes by the name of Weymouth, is said to be the best frequented in the county, and is defended by Sandford and Portland castles. The markets for both towns are Tuesdays and Fridays, but there are no fairs. Melcomb-regis is reckoned bigger, more thriving, and populous than Weymouth. They are both but one corporation and borough, consisting of a mayor, recorder, two bailiffs, an uncertain number of aldermen, and twenty-four capital burgesses. Whoever has been a mayor is ever after an alderman. They send four burgesses to parliament, who are elected by such as have freeholds, whether they inhabit here or not; and the number of voters is near 700. Every elector, as in London, has the privilege of voting for four persons, who when chosen are returned, in two distinct indentures, as the burgesses of Weymouth and the burgesses of Melcomb-Regis.

MELDÆ (anc. geog.), a town of Gallia Celtica, (called *Meldorum Civitas* in the Notitia), on the Matrona. Now *Meaux*, a city in Champaign on the Marne.

MELEAGER (fab. hist.) a celebrated hero, son of Ceneus king of Calydonia, by Althæa daughter of Thestius. The Paræ were present at the moment of his birth, and predicted his future greatness. Clotho said that he would be brave and courageous; Lachesis foretold his uncommon strength and valour; and Atropos said that he should live as long as that fire-brand which was on the fire remained entire and unconsumed. Althæa no sooner heard this, than she snatched the stick from the fire, and kept it with the most jealous care, as the life of her son totally depended upon its preservation. The fame of Meleager increased with his years; he signalized himself in the Argonautic expedition, and afterwards delivered his country from the neighbouring inhabitants, who made war against his father at the instigation of Diana, whose altars Ceneus had neglected. But Diana punished the negligence of Ceneus by a greater calamity. She sent a huge wild boar, which laid waste all the country, and seemed invincible on account of its immense size. It became soon a public concern: all the neighbouring princes assembled to destroy this terrible animal; and nothing is more famous in mythological history, than the hunting of the Calydonian boar. The princes and chiefs that assembled, and which are mentioned by mythologists, were Meleager son of Ceneus, Idas and Lynceus sons of Apharcus, Dryas son of Mars, Castor and Pollux sons of Jupiter and Leda, Pirithous son of Ixion, Theseus son of Ægeus, Anceus and Cepheus sons of Lycurgus, Admetus son of Pheres, Jason son of Æson, Peleus and Telamon sons of Æacus, Iphicles son of Amphitryon,

Eurytrion son of Actor, Atalanta daughter of Schæneus, Iolas the friend of Hercules, the sons of Thestius, Amphiarus son of Oileus, Protheus, Cometes, the brothers of Althæa, Hippothous son of Cercyon, Leucippus, Adrastus, Ceneus, Phileus, Echion, Lelex, Phoenix son of Amyntor, Panopeus, Hyleus, Hippasus, Nestor, Menœtius the father of Patroclus, Amphicides, Laertes the father of Ulysses, and the four sons of Hippocoon. This troop of armed men attacked the boar, and it was at last killed by Meleager.—The conqueror gave the skin and the head to Atalanta, who had first wounded the animal. This irritated the rest, and particularly Toxeus and Plexippus the brothers of Althæa, and they endeavoured to rob Atalanta of the honourable present. Meleager defended her, and killed his uncles in the attempt. Mean time the news of this celebrated conquest had already reached Calydon, and Althæa went to the temple of the gods to return thanks for the victory which her son had gained: But being informed that her brothers had been killed by Meleager, she in the moment of resentment threw into the fire the fatal stick on which her son's life depended, and Meleager died as soon as it was consumed. Homer does not mention the fire-brand; whence some have imagined that this fable is posterior to that poet's age. But he says, that the death of Toxeus and Plexippus so irritated Althæa, that she uttered the most horrible curses and imprecations upon her son's head.

MELEAGER, a Greek poet, the son of Eucrates, was born at Seleucia in Syria, and flourished under the reign of Seleucus VI. the last king of Syria. He was educated at Tyre; and died in the island of Coos, anciently called *Merope*. He there composed the Greek epigrams called by us the *Anthologia*. The disposition of the epigrams in this collection was often changed afterwards, and many additions have been made to them. The monk Planudes put them into the order they are in at present, in the year 1380.

MELEAGRIS, in ornithology, the TURKEY; a genus of birds belonging to the order of gallinæ. The head is covered with spongy caruncles; and there is likewise a membranaceous longitudinal caruncle on the throat.

There is but one (A) species, viz. the gallopavo, or North American turkey of Ray. It has a caruncle both on the head and throat; and the breast of the male is bearded or tufted. He lives upon grain and insects: when the cock struts, he blows up his breast, spreads and erects his feathers, relaxes the caruncle on the forehead, and the naked parts of the face and neck become intensely red. Barbot informs us that very few turkeys are to be met with in Guinea, and those only in the hands of the chiefs of the European forts; the negroes declining to breed any on account of their tenderness, which sufficiently proves them not to be natives of that climate. He also remarks, that neither the common poultry nor ducks are natural to Guinea any more than the turkey. Neither is that bird a native of Asia: the first that were seen in Persia were brought

Meleager.
Meleagris.

(A) Two others were formerly enumerated; but in the late edition of the *Syst. Nat.* by Gmelin, they have been transferred to a new genus. See PENELOPE.

Meleagris,
Meles.

brought from Venice by some Armenian merchants. They are bred in Ceylon, but not found wild. In fact, the turkey, properly so called, was unknown to the ancient naturalists, and even to the old world, before the discovery of America. It was a bird peculiar to the new continent; and is now the commonest wild-fowl in the northern parts of that country, where they are frequently met with by hundreds in a flock: in the day-time they frequent the woods, where they feed on acorns; and return at night to the swamps to roost, which they do on the trees. They are frequently taken by means of dogs, though they run faster for a time; but the dogs persisting in the pursuit, the birds soon grow fatigued, and take to the highest trees, where they will suffer themselves to be shot one after another if within reach of the marksman. This fowl was first seen in France in the reign of Francis I. and in England in that of Henry VIII. By the date of the reign of these monarchs, the first turkeys must have been brought from Mexico, the conquest of which was completed A. D. 1521. Ælian mentions a bird found in India, which some writers have suspected to be the turkey; but Mr Pennant concludes with Gefner, that it was either the peacock, or some bird of that genus.

The turkey-hen begins to lay early in the spring, and will often produce a great number of eggs, which are white, marked with reddish or yellow spots, or rather freckles. She sits well, and is careful of her young; of which in this climate she will often have from fourteen to seventeen for one brood: but she scarce ever sits more than once in a season, except allured thereto by putting fresh eggs under her as soon as the first set are hatched; for as she is a close sitter, she will willingly remain two months on the nest, tho' this conduct, as may be supposed, is said greatly to injure the bird. Turkeys are bred in quantities in some of the northern counties of England, and are driven up to London towards autumn for sale in flocks of several hundreds, which are collected from the several cottages about Norfolk, Suffolk, and neighbouring counties, the inhabitants of which think it well worth their while to attend carefully to them, by making these birds a part of their family during the breeding season. It is pleasing to see with what facility the drivers manage them, by means of a bit of red rag fastened to the end of a stick, which, from their antipathy to it as a colour, acts with the same effect as a scourge to a quadruped.

Of the turkey there are several varieties, which have arisen from domestication. The most common is *dark grey* inclining to black, or barred dusky white and black. There is also a beautiful variety of a fine deep *copper* colour, with the greater quills pure white, and the tail of a dirty white; it is when old a most beautiful bird. A variety with a *pure white* plumage is also now not unfrequent, and appears very beautiful. It was once esteemed as a great rarity, and the breed supposed originally to have arisen in Holland. In the Leverian Museum is also a common turkey, with a large *tuft* of feathers on its head, much resembling one figured by Albin.

MELES, in zoology. See URUS.

MELES (anc. geog.), a fine river running by the walls of Smyrna in Ionia, with a cave at its head, where

Homer is said to have written his poems. And from it Homer takes his original name *Melastigenes*, given him by his mother Critheis, as being born on its banks. (Herodotus.)

MELETIAN, in ecclesiastical history, the name of a considerable party who adhered to the cause of Meletius bishop of Lycopolis, in Upper Egypt, after he was deposed, about the year 306, by Peter bishop of Alexandria, under the charge of his having sacrificed to the gods, and having been guilty of other heinous crimes; though Epiphanius makes his only failing to have been an excessive severity against the lapsed. This dispute, which was at first a personal difference between Meletius and Peter, became a religious controversy; and the Meletian party subsisted in the fifth century, but was condemned by the first council of Nice.

MELIA, AZADERACH, or the *Bad tree*, in botany: A genus of the monogynia order, belonging to the decandria class of plants; and in the natural method ranking under the 23d order *Tribilae*. The calyx is quinque-dentated; the petals five; the nectarium cylindrical, as long as the corolla, with its mouth ten-toothed: the fruit is a plum with a quincucular kernel. There are three species, all of them exotic trees of the Indies, rising near 20 feet high; adorned with large pinnated or winged leaves, and clusters of pentapetalous flowers. They are all propagated by seeds sown on hot-beds.

MELIANTHUS, HONEY-FLOWER, in botany: A genus of the angiospermia order, belonging to the didynamia class of plants; and in the natural method ranking under the 24th order *Corydalis*. The calyx is pentaphyllous, with the lowermost leaf gibbous: there are four petals, with the nectarium under the lowest ones. The capsule is quadrilocular. There are two species. 1. The major hath a thick, ligneous, spreading root; many upright, ligneous, durable stalks, rising six or eight feet high; garnished with large pinnated leaves, of four or five pair of serrated lobes terminated by an odd one; and, from the sides and tops of the stalks, long spikes of chocolate-coloured flowers. 2. The minor hath a root like the former; upright, ligneous, soft, durable stalks, rising four or five feet high; garnished with smaller pinnated leaves; and from the sides and ends of the branches, long, loose, pendulous bunches of flowers tinged with green, saffron colour, and red.—Both the species flower about June: but rarely produce seeds in this country. They are very ornamental, both in foliage and flower, and merit admittance in every collection. They are easily propagated by suckers and cuttings. They thrive best in a dry soil, and in a sheltered warm exposure.

MELIBOEA (anc. geog.), an island of Syria, at the mouth of the Orontes; which, before it falls into the sea, forms a spreading lake round it. This island was famous for its purple dye. Thought to be a colony of Thessalians; and hence Lucretius's epithet, *Thessalicus*.

MELICA, ROPEGRASS: A genus of the digynia order, belonging to the triandria class of plants; and in the natural method ranking under the 4th order *Gramina*. The calyx is bivalved, biflorous, with an embryo of a flower betwixt the two florets. There are three species; of which the most remarkable is

Mel-etians
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Melica.

Meliceræ
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Melinum.

the nutans. It is a native of several parts of Britain, and the adjacent islands; and the inhabitants of some of the western islands make ropes of it for fishing-nets, as it will bear the water for a long time without rotting.

MELICERES, in surgery, a kind of encysted tumors, so called when their contents are of the consistence of honey.

MELICERTA, MELICERTES, or *Melicertus* (fab. hist.), a son of Athamas and Ino. He was saved by his mother from the fury of his father, who prepared to dash him against a wall as he had done his brother Learchus. The mother was so terrified that she threw herself into the sea with Melicerta in her arms. Neptune had compassion on the misfortunes of Ino and her son. He changed them both into sea deities. Ino was called *Leucothoë* or *Matuta*; and Melicerta was known among the Greeks by the name of *Palemon*, and among the Latins by that of *Portumnus*. Some suppose that the Isthmian games were instituted in honour of Melicerta.

MELILLA, an ancient town of Africa in the kingdom of Fez, and in the province of Garet. It was taken by the Spaniards in 1469, but returned back to the Moors. W. Long. 2 9. N. Lat. 35. 20.

MELILOT. See TRIFOLIUM.

MELINDA, a kingdom on the east coast of Africa, situated, according to some, between the third and fourth degree of south latitude; though there is great disagreement among geographers as to its extent. It is allowed by all, however, that the coasts are very dangerous; being full of rocks and shelves, and the sea at some seasons very liable to tempests. The kingdom of Melinda is for the most part rich and fertile; producing almost all the necessaries of life except wheat and rice, both which are brought thither from Cambaya and other parts; and those who cannot purchase them make use of potatoes in their stead, which are here fine, large, and in great plenty. They likewise abound with great variety of fruit-trees, roots, plants, and other esculents, and with melons of exquisite taste. They have also great plenty of venison, game, oxen, sheep, hens, geese, and other poultry, &c. and one breed of sheep whose tails weigh between 30 and 40 pounds. The capital city is also called *Melinda*.

MELINUM, in natural history, the name of an earth famous in the earliest ages of painting, being the only white of the great painters of antiquity; and, according to Pliny's account, one of the three colours with which alone they performed all their works. It is a fine, white, marly earth, of a very compact texture, yet remarkably light; a sort of texture which must render any earth fit for the painter's use that is of a proper colour. It is frequently found forming a stratum in the earth, lying immediately under the vegetable mould. It is of a very smooth but not glossy surface; is very soft to the touch; adheres firmly to the tongue; is easily broken between the fingers; and stains the skin in handling. It melts readily in the mouth, and is perfectly fine; leaving not the least grittiness between the teeth: thrown into water, it makes a loud bubbling and hissing noise, and moulders away into a fine powder. It does not ferment with acids; and suffers no change in the fire. These are the cha-

acters by which the melinum of the ancients is distinguished from all other white earths. It is still found in the same place from which the painters of old had it, viz. the isle of Milo or Melos, from whence it had its name; and is common in most of the adjacent islands. It has of late been tried here; but is found not to make such a bright paint as the other substances now employed. It is not, however, liable, like them, to turn yellow: hence it would seem to be worth the consideration of persons in the colour-trade; especially as it might be had in any quantities for the carriage.

MELISSA (fab. hist.), a daughter of Melissus king of Crete, who with her sister Amalthæa fed Jupiter with the milk of goats. She first found out the means of collecting honey; whence it has been fabled that she was changed into a bee, as her name is the Greek word for that insect.

MELISSA, BAUM: A genus of the gymnospermia order, belonging to the didynamia class of plants; and in the natural method ranking under the 42d order *Verticillatæ*. The calyx is arid, a little plane above, with the upper lip having its dents nearly of equal height: the upper lip of the corolla is arched and bifid; the under one, with the middle lobe, cordated. There are several species; but the most remarkable are the following. 1. The officinalis, or common baum, has fibrous perennial roots; many upright, square, branchy, annual stalks, rising two or three feet high; garnished with oblong, indented, opposite leaves, by pairs, two or three inches long, and half as broad; and from the upper axillas verticillate clusters of small white flowers upon single footstalks. There is also a kind with variegated leaves. 2. The grandiflora, or Hetrurian calamint, hath fibrous perennial roots and annual stalks, rising about a foot high, garnished with oblong, oval, indented, hairy, opposite leaves; and from the upper axillas verticillate clusters of large purple flowers on forked footstalks. 3. The calamintha, or common calamint of the shops, has fibrous perennial roots; upright, square, branchy hairy stalks, rising a foot high; roundish, indented, opposite leaves; and verticillate clusters of small bluish flowers, on forked footstalks as long as the flowers. All these species are easily propagated by offsets.

Medicinal uses. The first species, when in perfection, has a pleasant smell, somewhat of the lemon kind; and a weak, roughish, aromatic taste. The young shoots have the strongest flavour; the flowers, and the herb itself when old or produced in very rich moist soils or rainy seasons, are much weaker both in smell and taste. Baum is appropriated, by the writers on the materia medica, to the head, stomach, and uterus; and in all disorders of these parts is said to do extraordinary service. So high an opinion have some chemists entertained of this plant, that they have expected to find in it a medicine which should prolong life beyond the usual period. The present practice, however, holds it in no great esteem; and ranks it (where it certainly deserves to be) among the weaker corroborants. Infusions of the leaves in water smell agreeably of the herb, but have not much taste, though on being inspissated they leave a considerable quantity of a bitterish austere extract. Infusions of baum do not, like other aromatics,

Melissa.

Melissus
||
Melitus.

offend the head, as is complained of from sage, &c. Cold infusions in water or spirit are far better than the cohobated distilled water, and are the best preparations from the plant. On distilling the fresh herb with water, it impregnates the first running pretty strongly with its grateful flavour. When large quantities are subjected to the operation at once, there separates and rises to the surface of the aqueous fluid a small portion of essential oil, which some call *ol. Syriæ*, and others *ol. Germanis*. It is of a yellowish colour, and of a very fragrant smell.

MELISSUS of SAMOS, a Greek philosopher, was the son of Rhagines and the disciple of Parmenides; and lived about 440 B. C. He pretended that the universe is infinite, immovable, and without a vacuum. Themistocles was among his pupils.

MELITE (anc. geog.), an island referred to Africa by Scylax and Ptolemy; but nearer Sicily, and allotted to it by the Romans: commended for its commodious harbours; for a city well built, with artificers of every kind, especially weavers of fine linen; all owing to the Phœnicians the first colonists. Now *Malta*; remarkable for St Paul's shipwreck. See MALTA.

MELITE, *Melita*, or *Melitina Insula*; an island on the coast of Illyricum in the Adriatic. The *Catuli Melitæi* (Pliny) were famous. Now *Meledé*, the name of the island Samos. See SAMOS.

MELITE (anc. geog.), a town of Ionia, struck out of the number of Ionian towns on account of the arrogance of the people, and Smyrna admitted in lieu of it. The situation not said.

MELITENSIS TERRA, the *Earth of Malta*: an earth of which there are two very different kinds; the one of the genus of boles, the other of the marles. The latter is that known by medicinal authors under this name; the former is the Malta earth now in use: but both being brought from the same place, are confusedly called by the same name. The Maltese marle, which is the *terra Melitensis* of medicinal authors, is a loose, crumbly, and very light earth, of an unequal and irregular texture; and, when exposed to the weather, soon falls into fine soft powder: but when preserved and dried, it becomes a loose, light mass, of a dirty white colour, with a greyish cast: it is rough to the touch, adheres firmly to the tongue, is very easily crumbled to powder between the fingers, and stains the hands. Thrown into the water, it swells, and afterwards moulders away into a fine powder. It ferments very violently with acid menstrooms. Both kinds are found in great abundance in the island of Malta, and the latter has been much esteemed as a remedy against the bites of venomous animals. The other has supplied its place in the German shops; and is used there as a cordial, sudorific, and astringent.

MELITO (canonized), bishop of Sardis in Lydia, in the second century; remarkable for the apology he presented to the emperor Aurelius, in favour of the Christians; on which Eusebius and the other ancient ecclesiastical writers bestow great praises: but that apology and all Melito's other works are lost.

MELITUS, a Greek orator and poet, the accuser of Socrates. The Athenians, after the death of Socrates, discovering the iniquity of the sentence they had passed against that great philosopher, put Melitus to death, 400 B. C.

Mellán
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Melk.

MELLAN (Claude), an engraver of considerable note, was a native of Abbeville in Picardy, and born in 1601. His father was the receiver of the customs in that town; and he took great care of the education of his son. His genius for drawing discovering itself very early in life, he was sent to Paris, and placed under the direction of Simon Vouet in order to perfect himself in that art, and his studies promised success; but he was diverted from his application to them by the desire he had of learning the management of the graver, which he acquired with much facility. From Paris, at the age of sixteen, he went to Rome, where he engraved a considerable number of plates, many of which are held in great estimation; particularly those for the Justinian Gallery, the portrait of the Marquis Justinian, and that of Pope Urban VIII. Returning to France, he married at Paris, and settled there in 1654. The king of France being made acquainted with his merit, assigned him apartments in the Louvre, in the double quality of a painter and an engraver. He acquired a competent fortune, and was greatly esteemed by all who knew him. He died in 1688, aged 87.

Florent le Comte tells us, "That Charles II. was so much pleased with his performances, that he invited him to come into England, making him at the same time very advantageous offers. But the love of his country (continues that author) prevented his accepting of them."

It is remarked, that most of the plates which he engraved at Rome, and before he went thither, are executed in the usual manner; that is, with parallel strokes, crossed with second and third strokes, as the depth of the shadows might require. But afterwards he adopted a new mode of working with single strokes only, without any second strokes laid upon them; and the shadows are expressed by the same strokes being made stronger and brought nearer to each other. The effect which he produced by this method of engraving is soft and clear. In single figures and small subjects he succeeded very happily; but in large compositions, where great depth of shadow was required, he has failed. His neatest plates in this style have an unfinished appearance, by no means suitable to large engravings; but at the same time a lightness exceedingly agreeable when confined to small ones. According to Le Comte, the works of this master amount to 342.

MELLER, a lake of Sweden, 80 miles long, and 30 broad; on which stands the city of Stockholm.

MELLI, with the country of the Mundingoes, in Africa. The country formerly called *Melli*, now chiefly inhabited by the Mundingoes, who still retain pretty much of the character ascribed to the people of Melli, lies to the south of the river Gambia; on the west it borders on the kingdom of Kabo; on the south it has *Melli*, properly so called, and the mountains that part it from Guinea; and on the east it extends to the kingdom of Gago. A great part of this country we are little acquainted with; as is the case with regard to most of the inland territories of Africa, but towards the sea-coast this country is a little better known.

The first place of note we meet with is Kachao, a Portuguese colony, situated on the river of St Domingo, which falls into the sea about 26 leagues below this

Melli,
Melmoth

this town.—About 26 leagues above Kachao, on the same side of the river, is another trading town called *Farini*, where, in the months of October and November, one may trade for about half the quantity of wax and ivory which is traded for at Kachao. Here are also some slaves to be bought.—Bot is a village near the mouth of the river Gefves, where most of the traders buy rice; which is in great plenty there, and very good.—Gefves is a village on a river of the same name, on which the Portuguese have a factory. At Gefves one may trade yearly for 250 slaves, 8c or 100 quintals of wax, and as many of ivory. Near the mouth of the river of Gefves is a village called *Kurbali*, where there is a considerable trade for salt; here are also some slaves and ivory. Rio Grande, or the Great River, runs about 10 or 12 leagues to the south of the river of Gefves. About 80 leagues from the mouth of it is a nation of Negroes, who are good traders in ivory, rice, millet, and some slaves. They are called *Analons*. Over-against the mouth of Rio Grande is a cluster of islands called *Biffago Ists*; the most considerable of which is *Cassagut*, being about six leagues long and two broad; its soil is very good, and produces millet, rice, and all kinds of pulse, besides orange and palm-trees, and many others. This island, with those of *Carache*, *Canabac*, and *La Gallina*, are the only ones where the Europeans may trade with some security. They trade, however, sometimes at the other islands, but they must be extremely cautious; and yet after all their precautions, they will be robbed and murdered if they venture to go ashore. The river *Nunho* runs 16 leagues to the south of Rio Grande; it is very considerable, and comes from a vast distance in-land. One may buy here 300 quintals of ivory and 100 slaves a-year. Rice grows here admirably well, and is very cheap. There are every-where sugar-canes which grow naturally; and plants of indigo, which might turn to good account. The trade is carried on here from March till August. In the river of *Sierra Leone*, the late Royal African company of England had, in the year 1728, two islands; the one, called *Taffo*, a large flat island, near three leagues in circumference, in which the company's slaves had a good plantation; the rest of the island is covered with wood, among which are silk-cotton trees of an unaccountable size. The other island is *Benfe*, whereon stood a regular fort. It was formerly the residence of one of the English chiefs.

MELMOTH (William, Esq;), a learned and worthy benchman of Lincoln's Inn, was born in 1666. In conjunction with Mr Peere Williams, Mr Melmoth was the publisher of *Vernon's Reports*, under an order of the court of chancery. He had once an intention of printing his own Reports; and a short time before his death advertised them at the end of those of his coadjutor Peere Williams, as then actually preparing for the press. They have, however, not yet made their appearance. But the performance for which he justly deserves to be held in perpetual remembrance is, "The Great Importance of a Religious Life;" concerning which it may be mentioned, to the credit of the age, that notwithstanding many large editions had before been circulated, 42,000 copies of this useful treatise have been sold in the last 18 years. It is a somewhat singular circumstance, that the real author of this most

admirable treatise should never before have been publicly known (it having been commonly attributed to the first earl of Egmont, and particularly by Mr Walpole in his Catalogue); which is the more surprising, as the author is plainly pointed out in the following short character prefixed to the book itself: "It may add weight, perhaps, to the reflections contained in the following pages, to inform the reader, that the author's life was one uniform exemplar of those precepts which, with so generous a zeal, and such an elegant and affecting simplicity of style, he endeavours to recommend to general practice. He left others to contend for modes of faith, and inflame themselves and the world with endless controversy: it was the wiser purpose of his more ennobled aim, to act up to those clear rules of conduct which revelation hath graciously prescribed. He possessed by temper every moral virtue; by religion every Christian grace. He had a humanity that melted at every distress; a charity which not only thought no evil, but suspected none. He exercised his profession with a skill and integrity which nothing could equal but the disinterested motive that animated his labours, or the amiable modesty which accompanied all his virtues. He employed his industry, not to gratify his own desires; no man indulged himself less: not to accumulate useless wealth; no man more disdained so unworthy a pursuit: it was for the decent advancement of his family, for the generous assistance of his friends, for the ready relief of the indigent. How often did he exert his distinguished abilities, yet refuse the reward of them, in defence of the widow, the fatherless, and him that had none to help him! In a word, few have ever passed a more useful, not one a more blameless life; and his whole time was employed either in doing good or in meditating it. He died on the 6th day of April 1743, and lies buried under the cloister of Lincoln's Inn Chapel. MEM. PAT. OPT. MER. FIL. DIC." The son, by whom this character is drawn, is William Melmoth, Esq; the celebrated translator of Pliny and of Cicero's Letters; and author of those which pass under the name of *Sir Thomas Fitzosborne*.

MELOCHIA, *Jews Mallow*, in botany: A genus of the pentandria order, belonging to the monodelphia class of plants; and in the natural method ranking under the 37th order, *Columnifera*. The capsule is quinquelocular and monospermous. There are several species; but the only remarkable one is the olitorius, or common Jews-mallow, which is a native of the warm parts of Asia and America.—It is an annual plant, which rises about two feet high, dividing into several branches, garnished with leaves of different sizes and forms: some are spear-shaped, others are oval, and some almost heart-shaped: they are of a deep green, and slightly indented on their edges, having near their base two bristly reflexed segments. They have very long slender footstalks, especially those which grow on the lower part of the branches. The flowers sit close on the opposite side of the branches to the leaves, coming out singly; they are composed of five small yellow petals, and a great number of stamina surrounding the oblong germen, which is situated in the centre of the flower, and afterwards turns to a rough swelling capsule two inches long, ending in a point, and

Melmoth,
Melochia.

Melodunum,
Melody.

and having four cells filled with angular greenish seeds. This species is cultivated about the city of Aleppo in Syria, and in the East Indies, as a pot-herb; the Jews boiling the leaves, and eating them with their meat. It is supposed by Rauwolf to be the *olus Judaicum* of Avicenna, and the *corchorum* of Pliny.

MELODUNUM, (anc. geog.), a town of the Cenones in Gallia Celtica above Lutetia; now *Melun*, in the isle of France, on the Seine.

MELODY, in music, a succession of sounds ranged in such a manner, according to the laws of rhythm and modulation, that it may form a sentiment agreeable to the ear. Vocal melody is called *singing*; and that which is performed upon instruments may be termed *symphonic melody*.

The idea of rhythm necessarily enters into that of melody. An air is not an air but in proportion as the laws of measure and quantity are observed. The same succession of sounds is susceptible of as many different characters, as many different kinds of melody, as the various ways by which its emphatic notes, and the quantities of those which intervene, may be diversified; and the change in duration of the notes alone, may disguise that very succession in such a manner that it cannot be known. Thus, melody in itself is nothing; it is the rhythm or measure which determines it, and there can be no air without time. If then we abstract measure from both, we cannot compare melody with harmony; for to the former it is essential, but not at all to the latter.

Melody, according to the manner in which it is considered, has a relation to two different principles. When regarded only as agreeable to the proportions of sound and the rules of modulation, it has its principle in harmony; since it is a harmonical analysis, which exhibits the different gradations of the scale, the chords peculiar to each mode, and the laws of modulation, which are the sole elements that compose an air. According to this principle, the whole power of melody is limited to that of pleasing the ear by agreeable sounds, as the eye may be pleased with an agreeable assemblage of suitable colours. But when considered as an imitative art, by which we may affect the mind with various images, excite different emotions in the heart, inflame or soothe the passions; by which, in a word, we produce different effects upon our moral faculties, which are not to be effectuated by the influence of external sense alone, we must explore another principle for melody: for in our whole internal frame there appears to be no power upon which either harmony alone, or its necessary results, can seize, to affect us in such a manner.

What then is the second principle? It is as much founded on nature as the first; but, in order to discover its foundation in nature, it will require a more accurate though simpler observation, and a more exquisite degree of sensibility in the observer. This principle is the same which varies the tone of the voice, when we speak, according as we are interested in what we say, and according to the different emotions which we feel in expressing it. It is the accent of languages which determines the melody of every nation; it is the accent which determines us to employ the emphasis of speaking while we sing, and to speak with more or less energy according as the lan-

guage which we use is more or less accented. That language whose accents are the most sensible, ought to produce a more passionate and more lively melody; that which has little accentuation, or none at all, can only produce a cold and languid melody, without character and without expression. These are the true principles: in proportion as we depart from them, when we speak of the power of music upon the human heart, we shall become unintelligible to ourselves and others; our words will be without meaning.

If music does not impress the soul with images but by melody, if from thence it obtains its whole power, it must follow, that all musical sounds which are not pleasing by themselves alone, however agreeable to harmony they may be, is not an imitative music; and, being incapable, even with its most beautiful chords, either to present the images of things, or to excite the finer feelings, very soon cloy the ear, and leaves always the heart in cold indifference. It follows likewise, that notwithstanding the parts which harmony has introduced, and which the present taste of music so wantonly abuses, wherever two different melodies are heard at the same time, they counteract each other, and destroy the effects of both, however beautiful each may be when performed alone: from whence it may be judged with what degree of taste the French composers have introduced in their operas the miserable practice of accompanying one air with another, as well in singing, which is the native expression of pathos and sentiment, as in instrumental performances; which is the same thing as if whimsical orators should take it in their heads to recite two orations at the same time, that the elegance of each might derive more force from the other.

So much for Rousseau. The translator, however, has reason to fear, that the causes by which national melody is diversified and characterised, are more profound and permanent than the mere accentuation of language. This indeed may have great influence in determining the nature of the rhythm, and the place of emphatic notes; but very little in regulating the nature of the emphasis and expression themselves. If Rousseau's principle be true in its full extent, he must of necessity acknowledge, that an air which was never set or intended for words, however melodious, cannot be imitative: he must likewise confess, that what is imitative in one nation cannot be such in another: nor can it be denied upon his hypothesis, that the recitative, which is formed upon the mode of speaking, is the most forcible of all melodies; which is absurd. His other observations are at once judicious and profound. Though it is impossible to exhibit the beauty and variety of harmony by playing the same melody at the same time upon different keys, admitting those keys to form among themselves a perfect chord, which will of consequence preserve all the subsequent notes in the same intervals; yet this perfect harmony would by no means be uniformly pleasing to the ear. We must therefore of necessity introduce less perfect chords to vary and increase the pleasure, and these chords in any complex system of music must of necessity produce dissonances. It then becomes the business of the composer to be careful that these discords may arise as naturally from, and return as naturally to, perfect harmony,

Melody.

Meloe.

mony as possible. All these causes must inevitably vary the melody of the different parts; but still, amidst all these difficulties, the artist ought to be zealous in preserving the melody of each as homogeneous with the others as possible, that the result of the whole may be in some measure uniform. Otherwise, by counter-acting each other, the parts will reciprocally destroy the effects one of another.

MELOE, in zoology; a genus of insects of the order of coleoptera. The antennæ are jointed, the last joint being oval; the breast is roundish; the elytra are soft and flexible; and the head is inflected, and gibbous. The insects of this genus are divided into two families; one without wings, and having the elytra shorter than the abdomen; the other winged, with elytra shorter than the body and wholly covering the wings.—The most remarkable species are,

1. The *proscarabeus*; the colour of which is black, but without brightness, though intermixed with a small degree of purple, especially towards the under part of the body. Its head, which is large, is dotted; as is the thorax, which is narrower, round, and without a margin. The elytra are as soft as leather, shagreened, and cover but part of the abdomen. They are, as it were, cut off obliquely from the inner to the outer part, being shorter towards the suture, longer on the sides. There are no wings under the elytra. The abdomen is large, especially that of the female, in which it far exceeds the elytra.—This insect makes its abode on the side of wet roads and in woods. Its food are insects, violet leaves, and delicate herbs. There oozes from its body a fat unctuous matter of an agreeable smell. The males are less than the females.

2. The *vesicatorius*, or blistering meloe, is nine or ten lines in length, of a shining green colour mixed with azure. It multiplies greatly. They are sometimes seen flying in swarms. A nauseous smell, not unlike that of mice, bespeaks their approach; which scent leads to the discovery of them when they are sought for in order to make a provision. When dried, they are so light, that 50 scarce weigh one dram. They prey upon the leaves of trees and shrubs, and in preference take to those of the ash-tree. The odorous particles exhaled by these insects, are extremely corrosive. Great caution should be used in picking them up. People have been known to be seized with violent heat of urine, voiding of blood, for having gathered a quantity of them during the heat of the sun with their hands bare, or for having fallen asleep under trees where swarms of them had settled. The copulation of these insects is performed during the most intense heat of the day.

There are many other species, differing in size, figure, and colour. Nature has apparelled almost all of them in a splendid manner. Green, azure, and gold, render them dazzling to the eyes. They are most common in the southern parts of the continent. In this genus, as well as in some others, the females court, and in the act take the place of the males. The females deposit their eggs in the ground, whence proceed larvæ, which pass through the state of chrysalids in order to attain to that of meloes.

Uses. Oil in which insects of the *first* species have been infused is said to be an excellent topical for wounds and
N° 210.

the scorpion's sting. It enters also into the composition of salve for plague sores. The insects bruised and mixed with oil or honey, Linnæus says, are commended as a remedy in the rabies canina.

The *second* species is the cantharis of the shops; which, when bruised, is universally used as a blistering plaster. The largest and most esteemed of this sort come from Italy. Cantharides are extremely acrimonious: applied to the skin, they first inflame, and afterwards excoriate the part, raising a more perfect blister than any of the vegetable acids, and occasioning a more plentiful discharge of serum. All the blistering compositions have cantharides for their basis. The external application of cantharides is often followed by a strangury, accompanied with thirst and feverish heat: this inconvenience may be remedied by soft unctuous or mucilaginous liquors liberally drank.

Cantharides taken internally often occasion a discharge of blood by urine, with exquisite pain. If the dose is considerable, they seem to inflame and exulcerate the whole intestinal canal; the stools become mucous and purulent; the breath fetid and cadaverous; intense pains are felt in the lower belly; the patient faints, grows giddy, raving mad, and dies. All these terrible consequences have sometimes happened from a few grains. Herman relates, that he has known a quarter of a grain inflame the kidneys, and occasion bloody urine with violent pain. There are nevertheless cases in which this stimulating fly, given in larger doses, proves not only safe, but of singular efficacy for the cure of diseases that yield little to medicines of a milder class. In cold phlegmatic sluggish habits, where the viscera are overloaded, and the kidneys and ureters obstructed with thick viscid mucous matter, cantharides have excellent effects: here the abounding mucus defends the solids from the acrimony of the fly, till it is itself expelled; when the medicine ought to be discontinued. Groenvelt employed cantharides with great success in dropries, obstinate suppressions of urine, and ulcerations of the bladder; giving very considerable doses made into boluses with camphor; and interposing large draughts of emulsions, milk, or other emollient liquids: by this means, the excessive irritation, which they would otherwise have occasioned, was in great measure prevented. The camphor did not perhaps contribute so much to this effect as is generally imagined, since it has no sensible quality that promises any considerable abatement of the acrimony of cantharides: nitre would answer all that the camphor is supposed to perform; this, with milk, or emollient mucilaginous liquors, drank in large quantity, are the best correctors. Cantharides, in very small doses, may be given with safety also in other cases. Dr Mead observes, that the obstinate gleetings which frequently remain after the cure of venereal maladies, and which rarely yield to balsamic medicines, are effectually remedied by cantharides; and that no one remedy is more efficacious in leprous disorders; in which last, proper purgatives are to be occasionally taken during the use of the cantharides. The best and safest preparation of cantharides for these purposes, is a spirituous tincture; and indeed, in all cases, the tincture is far preferable, for internal use, to the fly in substance.

The virtues of cantharides are extracted by rectified spirit

Meloe.

Melon. spirit of wine, proof spirit, and water; but do not arise in distillation. The watery and spirituous extracts blister as freely as the fly in substance; whilst the fly remaining after the several menstrua have performed their office, is to the taste insipid, and does not in the least blister or inflame the skin.

* See Cucumis.

MELON, in botany, a species of *cucumis* *, in the Linnæan system. The female flowers have no stamina or summits, but have a very large oval germen, situated below the flower, which turns to an oval fruit with several cells, filled with oval, acute-pointed, compressed seeds, inclosed in a soft pulp. There is a great variety of this fruit cultivated in different parts of the world, many of them of no value, size being regarded too much in the markets. The *Cantaleupe melon*, so called from a place in the neighbourhood of Rome, where this fruit has been long cultivated, and whither it was brought from Armenia, is in the greatest esteem among the curious in every part of Europe. Besides this, there are also the *romana*, the *succado*, the *Zatte*, the small *Portugal* or *dormer*, and the black *Galloway* melons, most of which are cultivated for an early crop.

The proper management and culture of melons are as follow: the seeds should be procured from good melons, of the soundest sort and highest flavour, produced, as some have advised, in a distant garden; for if sown on the place where it was raised and ripened, it is very apt to degenerate. This seed should be kept three years before it is sown, but not more than six; and it should be sown at two seasons, or if at three it will be still better: the first for the early crop, to be raised under frames, should be sown about the middle of February; the second, to be raised in the same manner, is to be sown about the middle of March; and those which are designed for hand or bell-glasses, or to be covered with oil-papers, should not be sown till about a week in April.

For those of the first season, the seeds may be sown on the upper side of a cucumber-bed, if there be any; or, a proper quantity of new loose dung must be provided, and thrown on a heap to ferment, and turned over, that it may acquire an equal heat; and the plants must be raised and managed like cucumbers, until they are planted where they are to remain. The beds or ridges, where the plants are to remain, should be placed in a warm situation, so that they may be defended from all cold and strong winds, and inclosed in a good reed fence. In preparing the earth for these plants, the Dutch and German gardeners form a mixture of a third part of hazel loam, a third part of the scouring of ditches and ponds, and the same quantity of very rotten dung; which they mix up at least one, and often two years, before they make use of it, frequently turning it over, so that the parts may be well incorporated; but the compost in which Mr Miller has found melon plants to succeed best in England is two-thirds of fresh gentle loam, and one-third of rotten neat's dung: if these are mixed together one year before it is wanted, so as to have the benefit of a winter's frost and summer's heat, observing to turn it over often, and never suffering weeds to grow upon it, this will be found equal to any compost whatever. Before the plants appear, there should be a quantity of new dung thrown in a heap, allowing about 15 wheelbarrows full to each light; which must be turned over two or three times, and in a fortnight it will be

VOL. XI. Part 1.

fit for use; when the trench must be dug to receive the dung where the bed is designed to be made, which in a dry ground should not be less than a foot or a foot and a half deep. The frames should then be placed over the bed to keep out the wet; but no earth should be laid upon it for three or four days, till it is found of a proper temperature of heat. When this is the case, the earth may be laid upon it, about two inches thick, except in the middle of each light, where the plants are to be placed, which must be raised into a hill 15 inches high or more, terminating in a flat cone: in two or three days after the earth is put on the bed, it will be of a proper temper to receive the plants; which should be carefully taken up with a trowel, so as to preserve all the fibres of their roots; or if the beds cannot be ready for them in time, soon after the third or rough leaf is put out, it will be a good method to put each plant into a small pot while they are young, and these may be plunged into the hot bed where they were raised, or in a cucumber-bed, where there is room; and when the bed is ready, the plants may be turned out of the pots, with the whole ball of earth to their roots: and this is the best method for the Cantaleupe melon. When the plants are placed on the tops of the hills, they should be gently watered once or twice, till they have taken good root; and when they are well fixed in the new beds, a greater quantity of earth should be laid on the beds, pressed down as close as possible, and raised at least a foot and a half thick upon the dung all over the bed; observing also to raise the frames, that the glasses may not be too near the plants, lest the sun should scorch them. When the plants have four leaves, the top of the plants should be pinched off with the finger and thumb, that they may put out lateral branches for producing the fruit; and when two or more of these lateral shoots are produced, they must also be pinched to force out more. The management of these beds is much the same as that of cucumbers, except that melons require more air and very little water. In five or six weeks the plants will spread over the bed, and reach to the frames, when the alleys between the beds should be dug out; or in case of one bed, a trench should be made on each side about four feet wide, as low as the bottom of the bed; and hot dung wheeled in for a lining, to the same height as the dung of the bed; this should be trodden down close, and covered with the same earth that was laid on the bed, to the thickness of a foot and a half or more, treading it down as close as possible. In this way the bed will be extended to the width of 12 feet, that the roots of the plants may spread quite through it; and the beds will also require a fresh warmth, which will be of great service in setting of the fruit. When the vines have extended so as to fill the frames, and want more room, the frames should be raised up with bricks about three inches high, to admit the shoots of the vines to run out under them. When the fruit appears, the vines should be carefully looked over three times a week; and one should be chosen upon each runner that is situated nearest the stem, having the largest foot-stalk, and appearing to be the strongest fruit; then pinch off all the other fruit which may appear upon the same runner, and pinch off the end of the runner at the third joint above the fruit; and if the runner is gently pinched at the next

Melon.

3 B

joint

Melon. joint above the fruit, it will stop the sap and set the fruit. There is also another method practised by some gardeners to set this fruit, which is the taking off some of the male flowers, whose farina is just ripe and fit for the purpose, laying them over the female fruit, and gently striking with the nails the male flowers, to shake the farina into the female flowers; whereby they are impregnated, and the fruit will soon after swell, and manifest visible signs of being perfectly set; so that where the plants are under frames, and the wind excluded from them, which is wanted to convey the farina from the male to the female flowers, this practice may be very necessary. The glasses of the hot-bed should also be raised high, to admit a large share of air to the plants, otherwise the fruit will not set; and if the season should prove very warm, the glasses may be frequently drawn off, especially in an evening, to receive the dews, provided there is little wind stirring: but they should not remain off the whole night, lest the cold should prove too great. When the plants have extended themselves from under the frames, in cold weather their extremities should be covered every night with mats, and the plants should be watered once in a week in dry warm weather, in the alleys between the beds.

For those melons that are raised under bell or hand-glasses, the plants should be raised in the manner already directed, and about the latter end of April, in a forward season, the beds may be made. For this purpose, a sufficient quantity of hot-dung should be provided, allowing eight or nine good wheel-barrows of dung to each glass. For one bed extended in length, the trench should be cut out three-one-half feet wide, and of such a length, that the glasses may not be placed nearer than four feet to each other: in digging the trench, it should be so situated, as to allow for the widening of the bed three or four feet on each side; the depth must depend on the nature of the soil; and when there is no danger of the beds being injured by the wet, the lower it is made the better. When the dung, prepared as before, is laid on the bed, there should be a hill for each plant, one foot and a half high, and the other part need not be covered more than four inches thick; the glasses should then be placed over the hills, and in two or three days after the beds are made they will be fit for receiving the plants, which should be removed in the manner already directed. These plants must be watered at first, to settle the earth to their roots, and shaded every day, till they have taken new root; and if the nights prove cold, it will be proper to cover the glasses with mats, in order to preserve the warmth of the bed. If several beds are made, they should be placed at eight feet distance from each other. When the plants have taken good root, their tops must be pinched off, and the pruning must be the same as for those under frames. In the day-time, when the weather is warm, the glasses should be raised on the opposite side to the wind, to admit fresh air to the plants; and when they reach the sides of the glasses, in favourable weather the glasses must be set up on three bricks, that the vines may have room to run out under them; but when this is done, the beds should be covered all over with earth to the depth of one foot and an half, and trod down as close as possible; and in cold nights,

the beds should be covered with mats. And as the vines of the Cantaleupe melons cannot bear wet without injury, it will be necessary to arch the beds over with props to support the mats, that they may be ready for covering at all times when they require it. If the weather should prove cold, hot dung may be laid to these beds in the manner directed for those under frames. Some have lately raised their melons with considerable success under oiled paper; but great care must be taken not to keep these coverings too close over them. And Miller advises to bring up the plants under hand or bell glasses, till they begin to extend themselves under the glasses, and then, instead of the covering of mats, to put over them the paper done over with linseed oil.

The farther management of melons, after their fruit is set, is to keep pulling off all the superfluous fruit, and to pinch off all weak runners; and also to turn the fruit gently twice a-week, that each side may have equal benefit of the sun and air. When the fruit is fully grown, care should be taken to cut it at a proper time; for if it is left a few hours upon the vines, it will lose much of its delicacy; therefore the vines should be looked over at least twice in a day: and if the fruit intended for the table is cut early in the morning, before the sun has warmed it, it will be much better flavoured; but if it should be necessary to cut any afterwards, it should be put into cold spring water or ice to cool it, before it is brought to table, and that cut in the morning should be kept in the coolest place till it is used. The signs of this fruit's maturity is, its beginning to crack near the foot-stalk, and its beginning to smell, which never fail: but the Cantaleupe melons seldom change their colour till they are too ripe.

Mr Reynolds has communicated to the Society of Arts the following method of raising melons without earth, dung, or water. About a month before the seeds are sown, he prepares a bed of cast-off tanner's bark, four feet deep, six feet wide, and twelve feet in length: this he covers with four lights, so as not to admit rain or water. March (he says) is a proper season for this purpose. When the bed becomes warm, which generally happens in about 20 days, a few melon seeds are put into warm milk in an earthen vessel, which is pressed down into the bark-bed, where it remains 36 hours, in order to promote the vegetation of the seeds. Then, at equal distances, he directs to open four holes in the bed, each nine inches in diameter, and five inches deep; having in readiness about a peck of pounded bark, like saw-dust, some of it to be put at the bottom of the holes, to the thickness of three inches: on this bark some of the seeds are to be placed, and pressed down with the fingers; then the seeds are to be covered with two inches more of the powdered bark, pressing the whole down with the hand. When the plants are advanced to a proper size, the best are chosen and the others cast away; those that are reserved are ordered to be properly pruned, and to have as much warm air as possible during the summer. In this way (he says) he has raised as good melons as can be desired.

When a melon is perfectly fine, it is full, without any vacuity: this is known by knocking upon it; and when cut, the flesh must be dry, no water running

Melon.

Melon. out, only a little dew, which is to be of a fine red colour. Large melons are not to be coveted, but firm and well-flavoured ones. Our gardeners who raise melons for sale, sow the seeds of the larger rather than the good kinds, and they increase the size of these by much watering the roots; but this spoils the taste. Some of the French raise at this time particularly fine melons, by a method kept as a secret, but which we find, on a strict inquiry, is no other than the ingenious Mr Quintiny's of that nation, published near 80 years ago in our Philosophical Transactions.

The melons particularly proper to be treated in this manner, are those which have a thin and somewhat embroidered skin, not divided by ribs, and have a red pulp, dry and melting on the tongue, not mealy, and of a high flavour. These are what succeed in the following method, and are greatly improved in size and flavour by it.

When the seeds of this melon are placed in the ground, the first thing that appears is a pair of seminal leaves, or *ears*, as the gardeners call them. Between these two leaves there shoots, some days after, a leaf called the *first leaf* or *knot*; and out of the same place, after some days more, there shoots another leaf, called the *second knot*. Out of the midst of this stalk of the second knot, there shoots a third knot; this third knot must be cut off at its insertion, without hurting the branch of the second knot from whence it grows. Out of this place there will grow, after this cutting, a branch, which will be what the gardeners call the *first arm*; and this arm will, in the same manner as the first plant, shoot out, first one, then a second, and then a third knot; this third knot must be cut again as before, and thus the third knots are all along to be cut off, and arms or branches will grow up in the places of them all the way in the same manner as the first; and it is at those arms that the melons will be produced, and they will be always good, if the foot or root be well nourished in good earth, and cherished by a good hot-bed and the sun. The foot of the melon must never be suffered to pass into the dung, and the earth must not be watered but moderately, when it is seen to grow too dry; but in this case, it must be moderately moistened in time, lest the shoot suffer by it. Twice or thrice a-week is often enough to water in the driest weather, and this must always be done about sunset; and when the heat of the sun is too violent, the melons must be covered with straw mats from 11 in the morning to about two in the afternoon. When it rains much, the melons must also be covered, lest it hurt them by too much moisture. (Philosoph. Transf. n^o 45.)—If the root produce too many branches, the weakest are to be cut off, and only three or four left; and those which are left are to be such as have their knots closest to one another. When the plants are removed from the seed-bed to the places where they are to stand, if they are very strong, they should be planted single; but if otherwise, two are to be set in each hole.

When they are planted single, the two branches, which always grow on each side from the base of the seed-leaves, are to be left on; but when two plants are set together, these branches are to be cut off, other-

wise all the branches will be too numerous, and they will entangle and spoil one another.

When the melons are knit, two of them only are to be left upon each foot, choosing those which are best placed, and next to the first and principal stalk, that is, to the heart of the foot. None but fair fruits are to be left, and such as have a thick and short tail; and the foot of the melon must be short, well trussed, and not far distant from the ground. Melons of a long stem, and having the stalk of the leaf too long and slender, are never vigorous. All the superfluous branches must be cut off from time to time, as they shoot out. There sometimes shoot out a branch more than is here mentioned, between the two seed-leaves or ears. If this is strong and vigorous, it is to be kept on, but if weakly, it is best to take it off, for it will never bear good fruit.

Water-MELON. See *ANGURIA*.

MELOS, (anc. geog.), an island between Crete and Peloponnesus, about 24 miles from Scyllæum. It is about 60 miles in circumference, and of an oblong figure. It enjoyed its independence for above 700 years before the time of the Peloponnesian war. This island was originally peopled by a Lacedemonian colony, 1116 years before the Christian era. For this reason the inhabitants refused to join the rest of the islands and the Athenians against the Peloponnesians. This refusal was severely punished. The Athenians took Melos, and put to the sword all such as were able to bear arms. The women and children were made slaves, and the island left desolate. An Athenian colony repeopled it, till Lyfander reconquered it and re-established the original inhabitants in their possessions.

MELOTHRIA, in botany: A genus of the monogynia order, belonging to the triandria class of plants; and in the natural method ranking under the 34th order, *Cucurbitaceæ*. The calyx is quinquefid; the corolla campanulated and monopetalous; the berry trilocular and monospermous. There is only one species, viz. the pendula, a native of Carolina, Virginia, and also many of the American islands. The plants strike out roots at every joint, which fasten themselves into the ground, by which means their stalks extend to a great distance each way. The flowers are very small, in shape like those of the melon, of a pale sulphur colour. The fruit in the West Indies grows to the size of a pea, is of an oval figure, and changes to black when ripe: these are by the inhabitants sometimes pickled when they are green. In Britain the fruit are much smaller, and are so hidden by the leaves that it is difficult to find them. The plants are too tender to be reared in this country without artificial heat.

MELPOMENE (fab. hist.), one of the muses, daughter of Jupiter and Mnemosyne. She presided over tragedy. Horace has addressed the finest of his odes to her, as to the patroness of lyric poetry. She was generally represented as a young woman with a serious countenance. Her garments were splendid; she wore a buskin, and held a dagger in one hand and in the other a sceptre and crown.

MELROSE, a town of Scotland, in the county of Selkirk, and on the confines of Tweeddale,

Melt
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Melvil.

feated on the south side of the river Tweed; with an ancient abbey now in ruins. W. Long. 2. 32. N. Lat. 55. 32.

This abbey was founded by king David I. in 1136. He peopled it with Cisterians brought from Rivale abbey in Yorkshire, and dedicated it to the Virgin Mary. At the reformation James Douglas was appointed commendator, who took down much of the building, in order to furnish materials for a large house to himself, which still remains, and is dated 1590. Nothing is left of the abbey excepting a part of the cloister walls elegantly carved; but the ruins of the church are of most uncommon beauty. Part is at present used for divine service, the rest uncovered; but every part does great honour to the architect.—Alexander II. was buried beneath the great altar, and it is also the place of interment of the Douglasses and other potent families.—Its situation is extremely pleasant.

MELT OF FISHES. In the melt of a living cod there are such numbers of those animalcules said to be found in the semen of all male animals, that in a drop of its juice no larger than a grain of sand, there are contained more than 10,000 of them; and considering how many such quantities there are in the whole melt of one such fish, it is not incredible, that there are more animals in one melt of it than there are living men at one time upon the face of the earth. However strange and romantic such a conjecture must appear, a serious consideration and calculation will make it appear very plain. An hundred such grains of sand as those just mentioned will make about an inch in length; therefore in a cubic inch there will be a million of such sands; and if there be 10,000 animals in each of those quantities, there must be in the whole 150,000 millions, which is a number vastly exceeding that of mankind, even supposing the whole as populous as Holland.

MELTING CONE, in essaying, an hollow cone of brass or cast iron, into which melted metalline substances are thrown, in order to free them from their scoræ. When a small quantity of matter is melted, it will be sufficient to rub the inside of the cone with grease; but when the quantity is very large, especially if it contains any thing sulphureous, this caution of tallowing the moulds is not sufficient. In this case the essayer has recourse to a lute reduced to thin pap with water, which effectually prevents any injury to the cone.

MELTON-MOUBRAY, a town of Leicestershire, 108 miles from London. It is a large built place, in a fertile soil; with a market on Tuesday, the most considerable for cattle of any in this part of the island. It is almost encompassed with a little river called the *Eye*, over which it has two fine bridges; and has a large handsome church, with a free-school. Here are frequent horse-races, and three fairs in the year.

MELVIL (Sir James), descended from an honourable Scots family, being the third son of the laird of Kaeth, was born about the middle of the 16th century. He went to France very young, in the capacity of page to Queen Mary, then married to the dauphin; and on the death of her husband, followed her to Scotland, where he was made gentleman of her cham-

ber, and admitted a privy-counsellor. She employed him in her most important concerns, till her unhappy confinement in Lochleven, all which he discharged with the utmost fidelity; and, from his own accounts, there is reason to conclude, that, had she taken his advice, she might have avoided many of her misfortunes. When she was prisoner in England, she recommended him strongly to her son James; with whom he continued in favour and employment until the death of Queen Elizabeth: James would then have taken him to England; but Melvil, now grown old, was desirous of retiring from business, and in his retirement he drew up the memoirs of his past life for the use of his son. These Memoirs were accidentally found in Edinburgh castle in the year 1660, though nobody knew how they came to be deposited there; and were published in folio in 1683.

MEMBERS, in anatomy, the exterior parts, arising from the trunk or body of an animal, like the boughs from the trunk of a tree.

MEMBER, in architecture, denotes any part of a building; as a frieze, cornice, or the like.

MEMBER is sometimes also used for moulding.

MEMBER, in grammar, is applied to the parts of a period or sentence.

MEMBER, is also used to denote some particular order or rank in a state or government: thus we say, "member of a corporation, member of parliament, member of the council," &c.

MEMBRANE, MEMBRANA, in anatomy, a similar part of an animal body; being a thin, white, flexible, expanded skin, formed of several sorts of fibres interwoven together, and serving to cover or wrap up certain parts of the body. See *ANATOMY passim*.

MEMEL, or MEMMEL; a town of Prussia, situated on the northern extremity of the Curische Haf, an inlet of the sea about 70 miles in length, which is here joined to the Baltic by a narrow strait.—It is an ill-built town, with narrow dirty streets; but remarkable for its extensive commerce, being provided with the finest harbour in the Baltic. In 1784, 996 ships, amongst which were 500 English, arrived here. The imports chiefly are, salt, iron, and salted herrings; the exports, which greatly exceed the imports, are amber, corn, hemp, flax, and particularly timber. An English consul resides here. The trade is daily increasing, on account of the high duties which the court of Russia has laid on the imports of Riga.

MEMNON (fab. hist.), a king of Ethiopia, son of Tithonus and Aurora. He came with a body of 10,000 men to assist his uncle Priam, during the Trojan war. He behaved with great courage, and killed Antilochus, Nestor's son. The aged father challenged the Ethiopian monarch; but Memnon refused it on account of the venerable age of Nestor, and accepted that of Achilles. He was killed in the combat, in the fight of the Grecian and Trojan armies. Aurora prayed Jupiter to grant her son such honours as might distinguish him from other mortals. The god consented; and immediately a numerous flight of birds issued from the burning pile on which the body was laid, and dividing themselves into two separate bodies, fought with such fury, that above half of them fell down in the fire as victims to appease the manes of Memnon.

These

Members
||
Memnon.

Memnon These birds were called *Memnonides*; and it has been observed by some of the ancients, that they never failed to return yearly to the tomb of Memnon in Troas, and repeat the same bloody engagement in honour of the hero from whom they received their name. The Ethiopians or Egyptians, over whom Memnon reigned, erected a celebrated statue to the honour of their monarch. This statue had the wonderful property of uttering a melodious sound every day at sun-rising like that which was heard at the breaking of the string of a harp when it is wound up. This was effected by the rays of the sun when they fell upon it. At the setting of the sun, and in the night, the sound was lugubrious. This is supported by the testimony of the geographer Strabo, who confesses himself ignorant whether it proceeded from the basis of the statue, or the people that were then around it. This celebrated statue was dismantled by order of Cambyses when he conquered Egypt; and its ruins still astonish modern travellers by their grandeur and beauty.

MEMNON of Rhodes, one of the generals of Darius king of Persia, advised that prince to lay waste the country, in order to deprive Alexander the Great's army of support, and afterwards to attack Macedon; but this counsel was disapproved by Darius's other generals. Memnon behaved at the passage of the Granicus like an experienced general. He afterwards defended the city of Miletum with great courage; seized the islands of Chio and Lesbos; spread terror throughout all Greece; and would have put a stop to the conquests of Alexander, if he had not been prevented by death. Barsina, Memnon's widow, was taken prisoner with Darius's wife, and Alexander had a son by her named *Hercules*.

MEMOIRS, in matters of literature, a species of history, written by persons who had some share in the transactions they relate; answering to what the Romans called *Commentarii*.—The journals of the proceedings of a literary society, or a collection of matters transacted therein, are likewise called *Memoirs*.

MEMORY, a faculty of the mind, which presents to us ideas or notions of what is past, accompanied with a persuasion that the things themselves were formerly real and present. What we distinctly remember to have perceived, we as firmly believe to have happened, as what is now present to our senses.

The opinions of philosophers concerning the means by which the mind retains the ideas of past objects, and how those ideas carry with them evidence of their objects having been actually perceived, shall be laid before our readers in another place: (see *METAPHYSICS*, Part I. chap. ii.) At present we shall throw together some observations on the Memory, which, being of a practical rather than of a speculative nature, cannot be admitted into the article where the nature of the faculty itself is discussed.

“When we remember with little or no effort, it is called *remembrance* simply, or *memory*, and sometimes *passive memory* *. When we endeavour to remember what does not immediately and (as it were) of itself occur, it is called *active memory*, or *recollection*. A ready recollection of our knowledge, at the moment when we have occasion for it, is a talent of the greatest importance. The man possessed of it seldom fails

to distinguish himself in whatever sort of business he may be engaged.” It is indeed evident, that when the power of retention is weak, all attempts at eminence of knowledge must be vain; for “memory is the primary and fundamental power †, without which there could be no other intellectual operation. Judgment and ratiocination suppose something already known, and draw their decisions only from experience. Imagination selects ideas from the treasures of remembrance, and produces novelty only by varied combinations. We do not even form conjectures of distant, or anticipations of future, events, but by concluding what is possible from what is past.”

Of a faculty so important, many rules have been given for the regulation and improvement; of which the first is, that he who wishes to have a clear and distinct remembrance, should be temperate with respect to eating, drinking, and sleep. The memory depends very much upon the state of the brain; and therefore whatever is hurtful to the latter, must be prejudicial to the former. Too much sleep clouds the brain, and too little overheats it; therefore either of these extremes must of course hurt the memory, and ought carefully to be avoided. Intemperance of all kinds, and excess of passion, have the same ill effects; so that we rarely meet with an intemperate person whose memory is at once clear and tenacious.

“The liveliest remembrance is not so vivid as the sensation that produced it ‡; and ideas of memory do often, but not always, decay more and more, as the original sensation becomes more and more remote in time. Those sensations and those thoughts have a chance to be long remembered which are lively at first; and those are likely to be most lively which are most attended to, or which are accompanied with pleasure or pain, with wonder, surprise, curiosity, merriment, and other lively passions. The art of memory, therefore, is little more than the art of attention. What we wish to remember we should attend to, so as to understand it perfectly, fixing our view particularly upon its importance or singular nature, that it may raise within us some of the passions above-mentioned. We should also disengage our minds from all other things, that we may attend more effectually to the object which we wish to remember. No man will read with much advantage who is not able at pleasure to evacuate his mind, or who brings not to his author an intellect defecated and pure, neither turbid with care, nor agitated with pleasure. If the repositories of thought are already full, what can they receive? If the mind is employed on the past or the future, the book will be held before the eyes in vain.”

“It is the practice of many readers, to note in the margin of their books the most important passages *, the strongest arguments, or the brightest sentiments. Thus they load their minds with superfluous attention, repress the vehemence of curiosity by useless deliberation, and by frequent interruption break the current of narration or the chain of reason, and at last close the volume and forget the passages and the marks together. Others are firmly persuaded, that nothing is certainly remembered but what is transcribed; and they, therefore, pass weeks and months in transferring large quotations to a common place-book. Yet, why any part of a book which can be

* Beattie's
Elements
of Moral
Science.

Memory.

† Idler.

‡ Beattie's
Elements,
&c. and
Idler.

* Elements
of Moral
Science.

Memory.

consulted at pleasure should be copied, we are not able to discover. The hand has no closer correspondence with the memory than the eye. The act of writing itself distracts the thoughts; and what is read twice, is commonly better remembered than what is transcribed. This method, therefore, consumes time, without assisting the memory. But to write an abridgement of a good book may sometimes be a very profitable exercise. In general, when we would preserve the doctrines, sentiments, or facts, that occur in reading, it will be prudent to lay the book aside, and put them in writing in our own words. This practice will give accuracy to our knowledge, accustom us to recollection, improve us in the use of language, and enable us so thoroughly to comprehend the thoughts of other men, as to make them in some measure our own."

* Idler.

"Our thoughts have for the most part a connection*; so that the thought which is just now in the mind, depends partly upon that which went before, and partly serves to introduce that which follows.—Hence we remember best those things of which the parts are methodically disposed and mutually connected. A regular discourse makes a more lasting impression upon the hearer than a parcel of detached sentences, and gives to his rational powers a more salutary exercise: and this may show us the propriety of conducting our studies, and all our affairs, according to a regular plan or method. When this is not done, our thoughts and our business, especially if in any degree complex, soon run into confusion."

As the mind is not at all times equally disposed for the exercise of this faculty, such seasons should be made choice of as are most proper for it. The mind is seldom fit for attention presently after meals; and to call off the spirits at such times from their proper employment in digestion, is apt to cloud the brain, and prejudice the health. Both the mind and body should be easy and undisturbed when we engage in this exercise, and therefore retirement is most fit for it: and the evening, just before we go to rest, is generally recommended as a very convenient season, both for the stillness of the night, and because the impressions will then have a longer time to settle before they come to be disturbed by the accession of others proceeding from external objects; and to call over in the morning what has been committed to the memory over-night, must, for the same reason, be very serviceable. For, to review those ideas while they continue fresh upon the mind, and unmixed with any others, must necessarily imprint them more deeply.

Some ancient writers speak of an artificial memory, and lay down rules for attaining it. Simonides the poet is said first to have discovered this, or at least to have given the occasion for it. The story they tell of him is this: Being once at a feast, he recited a poem which he had made in honour of the person who gave the entertainment. But having (as is usual in poetry) made a large digression in praise of Castor and Pollux; when he had repeated the whole poem, his patron would give him but half the sum he had promised, telling him he must get the other part from those deities who had an equal share in the honour of

his performance. Immediately after, Simonides was told that two young men were without, and must needs speak with him. He had scarce got out of the house, when the room where the company was fell down, killed all the persons in it, and so marshed the bodies, that, when the rubbish was thrown off, they could not be known one from another: upon which Simonides recollecting the place where every one had sat, by that means distinguished them. Hence it came to be observed, that to fix a number of places in the mind in a certain order, was a help to the memory: As we find by experience, that, upon returning to places once familiar to us, we not only remember them, but likewise many things we both said and did in them. This action therefore of Simonides was afterward improved into an art; and the nature of it is this: They bid you form in your mind the idea of some large place or building, which you may divide into a great number of distinct parts, ranged and disposed in a certain order. These you are frequently to revolve in your thoughts, till you are able to run them over one after another without hesitation, beginning at any part. Then you are to impress upon your mind as many images of living creatures, or any other sensible objects which are most likely to affect you, and be soonest revived in your memory. These, like characters in short-hand, or hieroglyphics, must stand to denote an equal number of other words, which cannot so easily be remembered. When therefore you have a number of things to commit to memory in a certain order, all that you have to do is, to place these images regularly in the several parts of your building. And thus they tell you, that, by going over several parts of the building, the images placed in them will be revived in the mind; which of course will give you the things or words themselves in the order you desire to remember them. The advantage of the images seems to be this; that, as they are more like to affect the imagination than the words for which they stand, they will for that reason be more easily remembered. Thus, for instance, if the image of a lion be made to signify *strength*, and this word *strength* be one of those I am to remember, and is placed in the porch; when, in going over the several parts of the building, I come to the porch, I shall sooner be reminded of that image than of the word *strength*. Of this artificial memory, both Cicero and Quintilian speak; but we know not of any modern orator that has ever made use of it. It seems indeed to have been a laborious way of improving the memory, if it serves that end at all, and fitter for assisting us to remember any number of unconnected words than a continual discourse, unless so far as the remembrance of one word may enable us to recollect more. It is, however, in allusion to it, that we still call the parts of a discourse *places* or *topics*, and say, *in the first place, in the second place, &c.*

But, doubtless, the most effectual way to gain a good memory, is by constant and moderate exercise of it; for the memory, like other habits, is strengthened and improved by daily use. It is indeed hardly credible, to what a degree both active and passive remembrance may be improved by long practice. Scaliger reports of himself, that in his youth he could repeat

Memory, peat above 100 verses, having once read them; and *Berthicus* declares, that he wrote his *Comment upon Claudian* without consulting the text. To hope, however, for such degrees of memory as these, would be equally vain as to hope for the strength of *Hercules*, or the swiftness of *Achilles*.

§ *Idler*. "But there are clergymen who can get a sermon by heart § in two hours, though their memory, when they began to exercise it, was rather weak than strong: And pleaders, with other orators who speak in public and *extempore*, often discover, in calling instantly to mind all the knowledge necessary on the present occasion, and every thing of importance that may have been advanced in the course of a long debate, such powers of retention and recollection as, to the man who has never been obliged to exert himself in the same manner, are altogether astonishing. As habits, in order to be strong, must be formed in early life, the memories of children should therefore be constantly exercised; but to oblige them to commit to memory what they do not understand, perverts their faculties, and gives them a dislike to learning." In a word, those who have most occasion for memory, as orators and public speakers, should not suffer it to lie idle, but constantly employ it in treasuring up and frequently reviving such things as may be of most importance to them; for by these means, it will be more at their command, and they may place greater confidence in it upon any emergency."

‡ *Elements of Moral Science*.

"Men complain of nothing more frequently than of deficient memory ‡: and indeed every one finds, that after all his efforts many of the ideas which he desired to retain have slipped irretrievably away; that acquisitions of the mind are sometimes equally fugitive with the gifts of fortune; and that a short intermission of attention more certainly lessens knowledge than impairs an estate. To assist this weakness of our nature, many methods besides those which we have mentioned have been proposed; all of which may be justly suspected of being ineffectual: for no art of memory, however its effects may have been boasted or admired, has been ever adopted into general use; nor have those who possessed it appeared to excel others in readiness of recollection or multiplicity of attainments." The reader who is desirous to try the effect of those helps, may have recourse to a treatise entitled *A new Method of Artificial Memory*; but the true method of memory is attention and exercise.

MEMPHIS, an ancient city, and the royal residence of the kings in the Higher Egypt; distant from the Delta to the south 15 miles, according to Pliny. Called also *Moph* and *Noph*, in scripture.

Though this city is now so completely ruined, that authors greatly disagree concerning its situation; yet Strabo informs that in his time it was the most magnificent in Egypt, next to Alexandria. It was called the capital of the country; and there was an entire temple of Osiris, where the Apis or sacred ox was kept and worshipped. In the same place was an apartment of the mother of the ox; a very magnificent temple of Vulcan; a large Circus or space for fighting bulls; and a great Colossus in the middle of the city, which was thrown down. There was likewise a temple of Venus, and a Serapium in a very sandy place, where the wind heaps up hills of sand very dan-

gerous to travellers; together with a number of Sphinxes, the heads of some of them only being visible, the others covered up to the middle of their body. The same author likewise informs us, that in the front of the city there were many lakes; and that it contained a number of palaces, at that time in ruins. These buildings, he said, formerly stood upon an eminence: they lay along the side of the hill, stretching down to the lakes and groves, 40 stadia from the city. There was likewise a mountain in the neighbourhood, on which were a great number of pyramids, with the sepulchres of the kings, among which were three remarkable, and two of them accounted wonders of the world. From this description, Mr Bruce concludes that the celebrated capital of Egypt stood in the place where the villages of Metrahenny are now situated; in opposition to Dr Shaw's opinion, who thinks it was situated at Geeza or Giza.

M. Savary has also shown, that Giza was not the situation of the ancient Memphis. This flood, he says, on the western bank of the Nile, on the spot where the village of Memph now stands, which still preserves the name. Large heaps of rubbish are still to be seen there; but the Arabs have transported to Cairo the columns and remarkable stones, which they have disposed, without taste and without order, in their mosques and public buildings. This city extended as far as Saccara; and was almost wholly encompassed by lakes, part of which are still subsisting. It was necessary to cross them to convey the dead to the sepulchre of their fathers. The tombs, hewn out of the rock, were closed up with stones of a proportionable size, and covered with sand. These bodies, embalmed with so much care, preserved with so much respect, are torn from the monuments they repose in, and sold without decency to strangers by the inhabitants of Saccara. This place is called *the plain of mummies*. There too we find *the well of the birds*, into which one descends by means of a rope. It leads to subterraneous galleries, filled with earthen vases, containing the sacred birds. They are rarely met with entire, because the Arabs break them in hopes of finding idols of gold. They do not conduct travellers into the places where they have found more precious articles. They even close them up carefully, reserving to themselves some secret passages by which they descend. In a journey into Egypt made by the duke de Chaulnes, he advanced very far into these winding labyrinths, sometimes crawling, and sometimes scrambling, on his knees. Informed by Mr Edward Wortley Montague, who has carefully visited Egypt, he arrived at one of those passages which had an opening shut up from without by branches of the date-tree interwoven, and covered with sand. He remarked there some hieroglyphics *in relievo*, executed in the highest perfection. But the Arabs resisted every offer he made them to permit him to take drawings of them, or to mold them, in order to preserve their form. The duke de Chaulnes is of opinion that these hieroglyphics, sculptured with so much art that the objects they represent may be discovered at the first sight, might possibly furnish the key of the others, whose contours are simply expressed, and form a sort of alphabet of this unintelligible language. Several pyramids are distinguishable

Menage
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Menander.

guishable along the mountains which bound Saccara on the west, the greatest part of which appear as lofty as those of Giza. See PYRAMIDS.

MENAGE (Fr.), denotes a collection of animals; whence we have derived the word *menagery*.

MENAGE (Giles), in Latin *Ægidius*, a celebrated French writer, born at Angers in 1613. He finished his studies in that city, was made advocate, and pleaded for some time at Angers, Paris, and Poitiers; but, becoming at length disgusted with the bar, turned ecclesiastic, and gave himself up entirely to the study of polite literature. He at length entered into the family of the cardinal de Retz; but disagreeing with some persons belonging to his Eminence, went to live in the cloyster of Notre Dame, where he held an assembly of learned men every Wednesday. He read a great deal; had a prodigious memory; and was incessantly quoting in his conversation verses in Greek, Latin, Italian, French, &c. on which account he was often turned into ridicule by the wits, especially towards the end of his days. His great memory he retained even in his old age; and what is very rare, it returned to him after some interruption. The reputation of his works procured him a place in the academy *della Crusca* at Florence. He might have been a member of the French academy at its first institution, if it had not been for his *Requête des Dictionnaires*: but when that was forgot, he was proposed in 1684 to fill up a vacant place in that academy, and was excluded only by the superior interest of his competitor Mr Bergent; for there was not one member of all those who gave their votes against them, but owned that he deserved the place. He would not suffer his friends to propose him again. He died at Paris in 1692, aged 79. He wrote a great number of books in prose and verse; the principal of which are, 1. Miscellaneous works. 2. The Origin of the French Language. 3. The Origin of the Italian Tongue; the best edition of which is that of Geneva, in 1685, folio. 4. An edition of Malherbe's Poems, with Notes. 5. An edition of Diogenes Laertius, with Observations. 6. Remarks on the French Tongue. 7. Greek, Latin, Italian, and French Poems.

MENANDER, an ancient Greek poet, was born at Athens in the same year with Epicurus, which was the third of the 109th Olympiad. His happiness in introducing the new comedy, and refining an art which had been so gross and licentious in former times, quickly spread his name over the world. Pliny informs us, that the kings of Egypt and Macedon gave a noble testimony of his merit, by sending ambassadors to invite him to their courts, and even fleets to bring him over; but that Menander was so much of a philosopher, as to prefer the free enjoyment of his studies to the promised favours of the great. Of his works, which amounted to above 100 comedies, we have had a double loss, the originals being not only vanished, but the greatest part of them, when copied by Terence, having unfortunately perished by shipwreck before they saw Rome. Yet the four plays which Terence borrowed from him before that accident happened, are still preserved in the Roman habit; and it is chiefly from Terence that most people form their judgment of Menander, the fragments that remain of him not

Nº 210.

being sufficient to enable them to do it. The ancients have said high things of Menander; and we find the old masters of rhetoric recommending his works as the true patterns of every beauty and every grace of public speaking. Quintilian declares, that a careful imitation of Menander only, will satisfy all the rules he has laid down in his Institutions. It is in Menander that he would have his orator search for a copiousness of invention, for a happy elegance of expression, and especially for that universal genius which is able to accommodate itself to persons, things, and affections.— But Julius Cesar has left the loftiest as well as the justest praise of Menander's works, when he calls Terence only a *Half-Menander*. For while the virtues of the Latin poet are so deservedly admired, it is impossible we should raise a higher notion of excellency than to conceive the great original still shining with half its lustre unreflected, and preserving an equal part of its graces, above the power of the best copier in the world. Menander died in the 3d year of the 122d Olympiad, as we are taught by the same old inscription from which we learn the time of his birth. His tomb, in Pausanias's age, was to be seen at Athens, in the way from the Piræus to the city, close by the honorary monument of Euripides. Quintilian, in his judgment of Afranius the Roman comedian, who imitated him, censures Menander's morals as much as he commends his writings; and his character, according to Suidas, is, that he was a very "mad fellow after women." Phædrus has given him the gait and dress of a most affected fop:

"Unguento delibutus, vestitu adfluens,
"Veniebat gressu delicatulo & languido."

Lib. v. fab. 2.

MENANDRIANS, the most ancient branch of Gnostics; thus called from Menander their chief, said by some, without sufficient foundation, to have been a disciple of Simon Magus, and himself a reputed magician.

He taught, that no person could be saved, unless he were baptised in his name: and he conferred a peculiar sort of baptism, which would render those who received it immortal in the next world: exhibiting himself to the world, with the phrensy of a lunatic more than the founder of a sect, as a promised saviour. For it appears by the testimonies of Irenæus, Justin, and Tertullian, that he pretended to be one of the Æons sent from the pleroma, or ecclesiastical regions, to succour the souls that lay groaning under bodily oppression and servitude; and to maintain them against the violence and stratagems of the dæmons that hold the reins of empire in this sublunary world. As this doctrine was built upon the same foundation with that of Simon Magus, the ancient writers looked upon him as the instructor of *Menander*. See SIMONIANS.

MENASSEH (Ben Israel), a celebrated rabbi, born in Portugal about the year 1604, was the son of Joseph Ben Israel, and followed his father into Holland. Here he was educated by rabbi Isaac Uziel, under whom he in a short time made such progress in the Hebrew tongue, that at 18 years of age he succeeded him in the synagogue of Amsterdam. In this post he continued several years, and married Rachel of the

Menander,
Menan-
drians.

Mencke,
Mendel-
shon.

the family of the Abarbanel, whom the Jews imagine to be descended from king David. He afterwards went to his brother Ephraim, a rich merchant, who had settled at Basil; by whose advice he entered into trade. Some time after, the hopes of a more agreeable settlement induced him to come into England, under the protectorship of Cromwell; who gave him a very favourable reception, and one day entertained him at his table with several other learned divines. However, he soon after passed into Zealand; and died at Middleburg about the year 1657. The Jews at Amsterdam obtained his body, and interred it at their expense. He was of the sect of the Pharisees; had a lively wit, a solid judgement, great learning, and all the virtues that can adorn private life. He wrote many works in Hebrew, Latin, Spanish, and English. The principal of those published in Latin, are, 1. *His Conciliator*; a learned and curious work, in which he reconciles those passages of Scripture which seem to contradict each other. 2. *De resurrectione mortuorum*. 3. *De termino vite*. 4. *Dissertatio de fragilitate humana, ex lapsu Adami, deque Divino in bono opere auxilio*. 5. *Spes Israel*. Dr Thomas Pococke has written his life in English.

MENCKE (Lewis Otto), in Latin *Menckenius*, a learned professor of morality at Leipzig, was born at Oldenburg in Westphalia in 1644. He studied in several universities of Germany; and became an able philosopher, civilian, and divine. He was made professor of morality at Leipzig in 1668; and enjoyed that post to his death. He was five times rector of the university of that city, and seven times dean of the faculty of philosophy. He published several works; but his most considerable, and what alone is sufficient to perpetuate his memory, is the *Acta Eruditorum* of Leipzig, of which he was the first author, and in which he was engaged till his death. The first volume was published at Leipzig, in 4to, in 1682.

MENCKE (John Burchard), son to the preceding. After his studies he travelled into England and Holland; and upon his return was appointed professor of history at Leipzig in 1699. He gained great reputation by his lectures as well as his writings. He died in 1732, aged 58. He wrote many pieces. His *De Charlataneria eruditorum declamationes duæ*, is an excellent satire, designed to expose the artifices used by false scholars to raise themselves a name. As he named and pointed at certain persons, it exasperated them, and they procured his book to be seized; but it spread, and editions of it were multiplied. He likewise published *Methodé pour étudier l'Histoire, avec un catalogue des principaux historiens*, &c. He made a great many additions to Mr Lenglet's book, especially with regard to the German historians.

MENDELSON (Moses), that is, *Moses the son of Mendel*, a Jew of Berlin, and one of the most celebrated writers in Germany, died there in the year 1785 at the age of 57. His first attempt as an author was in 1755, by a work intitled *Jerusalem*; in which, besides other bold and unjustifiable opinions, he maintains, that the Jews have a revealed law but not a revealed religion; that opinions are not subjects of revelation; and that the only religion of the Jewish nation is that of nature. He acquired great honour by his *Phedon*, or "Discourse on the Immateriality and

VOL. XI. Part I.

Immortality of the Soul," translated into French 1773, 8vo; in which he unfolds this important truth, the great foundation of all morality, with the wisdom of an enlightened philosopher and the charms of an elegant writer. In consequence of this excellent work, he was styled the *Jewish Socrates* by some of the periodical writers; but he wanted the firmness and courage of the Grecian philosopher. His timidity, and even pusillanimity, defects too common in speculative men, prevented him from being of any essential service to his nation; of which he might have become the benefactor by being the reformer. The pliancy of his character, his soft, modest, and obliging disposition, gained him the esteem alike of the superstitious and of the incredulous. After all, he could never procure admission to the Berlin society, or to the conversation of the king of Prussia. At his death he received from his nation those honours which are commonly paid to their first rabbins. Contrary to an imprudent custom prevalent among the Jews of burying their dead before sunset, his interment was delayed till 24 hours after he expired. Though Mendelson was descended from a respectable family, he was very poor. In early life he entered into a counting-house of his own nation, wherein he greatly recommended himself by his capacity and integrity in business: But philosophy and literature soon became his principal occupation; and to the famous Lessing he was indebted for counsels which, without diverting his attention from those pursuits that were necessary to his subsistence, accelerated his progress in his literary career. Even after the death of his benefactor, Mendelson retained for him the sincerest regard and the most lively gratitude. Notwithstanding the very strict regimen which he observed, he survived him only a few years; for his feeble frame and weak constitution were gradually and insensibly undermined by intense application to study.

MENDEZ PINTO (Ferdinand), was born at Montemor-o-velho in Portugal, and was at first servant to a Portuguese gentleman. In expectation of making a fortune, he embarked for India in 1537. His vessel being taken by the Turks on his passage, he was carried to Mocha, and sold to a Greek renegado, and afterwards to a Jew, in whose possession he continued till he was redeemed by the governor of Ormus, a Portuguese fort. The governor procured him an opportunity of going out to India, agreeable to his first design. During a residence of twenty-one years in that country, he was witness to very important transactions, and experienced many singular adventures. He returned to Portugal in 1558, where he enjoyed the reward of his labours, after having been thirteen times a slave and sixteen times sold. A very curious account of his travels was written by himself, and published at Lisbon, A. D. 1614, in folio. This work was translated into French by Bernard Figuier, a Portuguese gentleman, and printed at Paris 1645, in 4to. It is written in a very interesting manner, and in a style more elegant than might have been expected from a man whose whole life was spent in the camp and in slavery. It elucidates a great variety of particulars relating to the geography, history, and manners of the inhabitants of China, Japan, Pegu, Siam, Achem, Java, &c. Many of his facts appeared fabulous, but their truth has been since ascertained.

Mendel-
shon,
Mendez.

Mendi-
cants.

M. de Surgi compiled an interesting history from the most singular facts in Mendez Pinto's relation, which he published in the *Vicissitudes de la Fortune*, Paris, 2 vols, 8vo.

MENDICANTS, or **BEGGING FRIARS**, several orders of religious in Popish countries, who having no settled revenues, are supported by the charitable contributions they receive from others.

This sort of society began in the 13th century; and the members of it, by the tenor of their institution, were to remain entirely destitute of all fixed revenues and possessions; though in process of time their number became a heavy tax upon the people. Innocent III. was the first of the popes who perceived the necessity of instituting such an order; and accordingly he gave such monastic societies, as made a profession of poverty, the most distinguishing marks of his protection and favour. They were also encouraged and patronized by the succeeding pontiffs, when experience had demonstrated their public and extensive usefulness. But when it became generally known, that they had such a peculiar place in the esteem and protection of the rulers of the church, their number grew to such an enormous and unwieldy multitude, and swarmed so prodigiously in all the European provinces, that they became a burden, not only to the people, but to the church itself. The great inconvenience that arose from the excessive multiplication of the mendicant orders was remedied by Gregory X. in a general council, which he assembled at Lyons in 1272. For here all the religious orders that had sprung up after the council held at Rome in 1215, under the pontificate of Innocent III. were suppressed; and the extravagant multitude of mendicants, as Gregory called them, were reduced to a smaller number, and confined to the four following societies or denominations, viz. the **DOMINICANS**, the **FRANCISCANS**, the **CARMELITES**, and the **AUGUSTINS** or hermits of St Augustin.

As the pontiffs allowed these four mendicant orders the liberty of travelling wherever they thought proper, of conversing with persons of every rank, of instructing the youth and multitude wherever they went; and as those monks exhibited, in their outward appearance and manner of life, more striking marks of gravity and holiness than were observable in the other monastic societies, they arose all at once to the very summit of fame, and were regarded with the utmost esteem and veneration through all the countries of Europe. The enthusiastic attachment to these sanctimonious beggars went so far, that, as we learn from the most authentic records, several cities were divided or cantoned out into four parts, with a view to these four orders; the first part being assigned to the Dominicans, the second to the Franciscans, the third to the Carmelites, and the fourth to the Augustinians. The people were unwilling to receive the sacraments from any other hands than those of the mendicants, to whose churches they crowded to perform their devotions, while living, and were extremely desirous to deposit there also their remains after death: nor did the influence and credit of the mendicants end here; for we find in the history of this and of the succeeding ages, that they were employed, not only in spiritual matters, but also in temporal and political affairs of the greatest conse-

Mendi-
cants.

quence, in composing the differences of princes, concluding treaties of peace, concerting alliances, presiding in cabinet councils, governing courts, levying taxes, and other occupations, not only remote from, but absolutely inconsistent with, the monastic character and profession. However the power of the dominicans and Franciscans greatly surpassed that of the other two orders: insomuch that these two orders were, before the reformation, what the Jesuits have been since that happy and glorious period, the very soul of the hierarchy, the engines of the state, the secret springs of all the motions of the one and the other, and the authors and directors of every great and important event, both in the religious and political world. By very quick progression their pride and confidence arrived at such a pitch, that they had the presumption to declare publicly, that they had a divine impulse and commission to illustrate and maintain the religion of Jesus; they treated with the utmost insolence and contempt all the different orders of the priesthood; they affirmed without a blush, that the true method of obtaining salvation was revealed to them alone; proclaimed, with ostentation, the superior efficacy and virtue of their indulgencies; and vaunted beyond measure their interest at the court of heaven, and their familiar connections with the Supreme Being, the Virgin Mary, and the saints in glory. By these impious wiles, they so deluded and captivated the miserable, and blinded the multitude, that they would not intrust any other but the mendicants with the care of their souls. They retained their credit and influence to such a degree, towards the close of the 14th century, that great numbers of both sexes, some in health, others in a state of infirmity, and others at the point of death, earnestly desired to be admitted into the Mendicant order, which they looked upon as a sure and infallible method of rendering heaven propitious. Many made it an essential part of their last wills, that their bodies after death should be wrapped in old ragged Dominican or Franciscan habits, and interred among the Mendicants. For such was the barbarous superstition and wretched ignorance of this age, that people universally believed they should readily obtain mercy from Christ, at the day of judgment, if they appeared before his tribunal associated with the Mendicant friars.

About this time, however, they fell under an universal odium; but being resolutely protected against all opposition, whether open or secret, by the popes, who regarded them as their best friends and most effectual supports, they suffered little or nothing from the efforts of their numerous adversaries. In the 15th century, besides their arrogance, which was excessive, a quarrelsome and litigious spirit prevailed among them, and drew upon them justly the displeasure and indignation of many. By affording refuge at this time to the Beguins in their order, they became offensive to the bishops, and were hereby involved in difficulties and perplexities of various kinds. They lost their credit in the 16th century by their rustic impudence, their ridiculous superstitions, their ignorance, cruelty, and brutish manners. They discovered the most barbarous aversion to the arts and sciences, and expressed a like abhorrence of certain eminent and learned men, who endeavoured to open the paths of science.

Mendoza
||
Menedemus.

science to the pursuits of the studious youth, recommended the culture of the mind, and attacked the barbarism of the age in their writings and discourse. Their general character, together with other circumstances, concurred to render a reformation desirable, and to accomplish this happy event.

Among the number of Mendicants are also ranked the Capuchins, Recollects, Minims, and others, who are branches or derivations from the former.

Buchanan tells us, the Mendicants in Scotland, under an appearance of beggary, lived a very luxurious life; whence one wittily called them, not *Mendicant*, but *Manducant* friars.

MENDOZA (Juan Gonzales de), an Augustan friar, of the province of Castile, was made ambassador from the king of Spain to the emperor of China. In 1593, he was made bishop of Liperi in Italy. In 1607 he was made bishop of Chiapa in New Spain, and the next year was removed to the see of Papaian in the West Indies. He wrote a history of China in Spanish, which has been translated into several languages.

MENE, a Chaldean word, which signifies "he has numbered or counted;" being one of the three words that was written upon the wall by the hand that appeared to Belshazzar, the last king of Babylon, the night that he was put to death. See BELSHAZZAR.

MENECRATES, a physician of Syracuse, who flourished about 360 B. C. is famous for his skill in his profession, but much more for his vanity. He would always be followed by some of the patients he had cured, and with whom he previously stipulated that they should follow him wherever he went. One appeared with the attributes of Hercules, another with those of Apollo, and others again with those of Mercury or Æsculapius; while he, clad in a purple robe, with a golden crown on his head, and a sceptre in his hand, presented himself, to the admiration of the public, under the name of *Jupiter*, and travelled through different countries escorted by these counterfeit deities. He once wrote the following letter to the king of Macedon: Menecrates-Jupiter to Philip, greeting. Thou reignest in Macedonia, and I in medicine; thou givest death to those who are in good health, I restore life to the sick; thy guard is composed of Macedonians; the gods themselves constitute mine." Philip answered him in a word, that he wished him restored to reason. Learning some time after that he was in Macedon, Philip sent for him, and invited him to an entertainment. Menecrates and his companions were placed on rich and lofty couches; before which was an altar, covered with the first fruits of the harvest; and whilst an excellent repast was served up to the other guests, perfumes and libations only were offered to these new gods, who, unable to endure the affront, hastily left the palace, in which they never more made their appearance.

MENEDEMUS, a Greek philosopher, born at Erythreum, was the son of Calisthenes, and one of Phedo's followers. He was in greatest esteem, and enjoyed several important posts, in his own country. He several times defended Erythreum with great bravery, and died of grief when Antigonus became master of it. A person one day saying to him, "It is a great happiness to have what we desire," he replied, "It is

a much greater to desire nothing but what we have." Menelaus
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Menge.

He flourished about 300 B. C.
MENELAUS, the son of Atreus, and the brother of Agamemnon, reigned at Sparta, when Paris deprived him of his wife Helen. This rape occasioned the famous war of Troy. See HELEN.

MENELAUS, a mathematician in the reign of the emperor Trajan, wrote three books on the *Sphere*, which have been published by father Marsenne.

MENES, born at This, a town of Thebais in Upper Egypt, was the founder of the Egyptian empire. He had three sons, viz. Athotis, who ruled after him at This and Thebes; Curudes, who in Lower Egypt founded the kingdom of Heliopoli, which afterward was the kingdom of Diospoli; and Necherophes, who reigned at Memphis. It is thought this Menes reigned 117 years after the birth of Phaleg, son of Heber, which was the very year of the dispersion of the people throughout the whole earth. In building Memphis, he stopped the Nile near it, by the invention of a causeway 100 furlongs broad, and caused it to run through the mountains.

MENESTRIER (John Baptiste le), a native of Dijon, and one of the most learned and curious French antiquaries of his time, wrote, 1. A Treatise on the Medals, Money, and Ancient Monuments, of the Roman Emperresses, in folio. 2. The most famous Medals of the Ancient Roman Emperors and Emperresses, in quarto. He died in 1634, aged 70.

MENGES (Anthony Raphael), first painter to the king of Spain, was born at Auffig in Bohemia, A. D. 1728. His father, painter to Augustus III. king of Poland, perceiving his superior talents, carried him from Dresden to Rome in 1741. After having there pursued his art for four years, and copied the principal monuments of that capital, he returned to Dresden, where he executed different works for Augustus with very uncommon success. During his abode in Italy, he became acquainted with Don Carlos king of Naples; and when this prince succeeded to the crown of Spain in 1761, he was careful to engage Menges in his service, by granting him an yearly pension of 2000 doubloons, together with a house and equipage. He lived, however, chiefly at Rome; where in 1779 he fell a sacrifice to his confidence in a German quack, who pretended to cure him of a disease which he had contracted partly by his intense application, and partly by grief for the loss of his wife. His natural timidity and great ignorance of the world, the distrust which seemed to be expressed in his air and manners, and his melancholy constitution of body, by no means lessened the envy of his rivals. Under this rude appearance, he had a heart full of kindness and humanity. On one occasion, when he perceived that he had offended a certain person by his bluntness (excusable only in a great genius), he was not only sorry for his inattention, but he assisted with his advice the painter whom he had offended. He made no mystery of his art any more than of his sentiments. Clement XIV. submitted to his judgment some pictures of no great value, and in excuse told him that he had bought them at the recommendation of an eminent painter. "This man and I (replied Menges) are two artists, one of whom praises every thing which he cannot equal, and the other blames every thing which he can surpass." His

Mengs
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Menip-
pean.

manners were pure and simple, and enthusiasm for the arts had almost extinguished in him every other passion. He was a good husband and a good father; and his family could reproach him with nothing but want of economy and unbounded generosity. Although he had received during the last 18 years of his life more than 250,000 livres, he hardly left wherewithal to defray the expences of his funeral. The king of Spain adopted his five daughters, and granted pensions to his two sons. His chief works in the line of his profession are at Madrid and at Rome. A catalogue of them is to be found in the account of his life prefixed to his whole works, in 2 vols 4to, published at Parma in 1780 by the Chevalier d'Azara, with notes. The first volume contains, 1. Reflections on the *beautiful*, and on taste in painting. 2. Reflections on Raphael, Corregio, Titian, &c. 3. On the means of promoting the cultivation of the fine arts in Spain.—The second volume contains, 1. Two letters on the group of Niobé. 2. A letter on the origin, progress, and decline of drawing. 3. A letter on the principal paintings at Madrid. 4. Memoirs of the life and works of Correggio. 5. Memoirs concerning the academy of fine arts at Madrid. 6. Practical lessons in painting. Part of his works have been translated into French by M. Doray de Longrais, and published at Paris 1782 in 8vo. A collection of them was lately published in 4to, 2 vols, 1787.—Mengs placed Raphael at the head of modern painters for design and expression, Corregio for gracefulness of attitude and the *claro obscuro*, and Titian for colouring. He formed his own style upon the different excellencies of those three artists. He united the most sublime expression to the truest colouring, and to that knowledge of different effects which captivates the senses at the first impression, and which will bear the most rigid examination. His paintings possess chiefly that grace which one feels without being able to explain. Nobody ever studied the ancients with greater care than he did. The technical part in *l'Histoire de l'Art*, by his friend the Abbé Winckelman, is of his composition. He respected and admired the ancients; but he was destitute of that excessive zeal which makes their votaries conceal those faults which they perceive.

MENIALS, domestic or household servants, who live under their lord or master's roof.

MENINGES, or MENYNGES, in anatomy, a name given to the dura and pia mater of the brain. See ANATOMY, n° 129.

MENINX, an island in the Mediterranean, to the west of the Syrtis Minor. Supposed by Strabo and Polybius to be Homer's country of the Lotophagi; and hence Ptolemy and Eratosthenes denominate the island *Lotophagitis*, with a cognominal town *Meninx*. It was the country of Vibius Gallus the emperor, and of Volusianus. Now called *Gerbi* and *Zarbi*.

MENIPPUS, a cynic philosopher of Phœnicia. He was originally a slave, but obtained his liberty with a sum of money, and became one of the greatest usurers at Thebes. He grew so desperate from the continual reproaches and insults to which he was daily exposed on account of his meanness, that he destroyed himself. He wrote 13 books of satires, which have been lost.

MENIPPEAN (*satira MENIPPEA*), a kind of sa-

tire consisting of prose and verse intermixed. It is thus called from Menippus a cynic philosopher who delighted in composing satirical letters, &c. In imitation of him, Varro also wrote satires under the title of *Satira Menippeæ*: whence this sort of composition is also denominated *Varronian satire*.

Among the moderns there is a famous piece under this title first published in 1594, against the chiefs of the league, called also the *Catholicon* of Spain. It is esteemed a master-piece for the time.

MENISCUS, in optics, a glass or lens, concave on one side and convex on the other; sometimes also called *lunula*. See OPTICS.

MENISPERMUM, MOONSEED: A genus of the decandria order, belonging to the diœcia class of plants; and in the natural method ranking under the 11th order, *Sarmentaceæ*. The male has four exterior and eight interior petals; there are 16 stamina; the corolla of the female is the same as in the male; there are eight barren stamina, and two monospermous berries. There are three species, all of them climbing plants, rising 14 feet high, and natives of warm climates; but noway remarkable for beauty. The seeds of a kind which grows in the Levant, being formed into a paste, are regarded by the inhabitants as specific against lice and cutaneous eruptions. The same paste is likewise used for the purpose of intoxicating fishes. See *COCCULUS Indicus*.

MENNITH, or MINNITH, Judges xi. 33. a town near Heshbon (Jerome), in Arabia Petrea; in a district named *Ecospolis*, or *twenty-towns*, (Cellarius). There is also a Minnith mentioned Ezekiel xxvii. as being in a good wheat country: but whether the same with the foregoing is uncertain; though some think that the first Minnith lay in the country of Ammon, (Wells).

MENNONITES, a sect in the United Provinces, in most respects the same with those in other places called *Anabaptists*.

They had their rise in 1536, when Menno Simon, a native of Friesland, who had been a Romish priest, and a notorious profligate, resigned his rank and office in the Romish church, and publicly embraced the communion of the Anabaptists.

Menno was born at Witmarsum, a village in the neighbourhood of Bolswert in Friesland in the year 1505, and died in 1561 in the duchy of Holstein, at the country seat of a certain nobleman not far from the city of Oldesloe, who, moved with compassion by a view of the perils to which Menno was exposed, and the snares that were daily laid for his ruin, took him with certain of his associates into his protection, and gave him an asylum. The writings of Menno, which are almost all composed in the Dutch language, were published in folio at Amsterdam in the year 1651. About the year 1637, Menno was earnestly solicited by many of the sect with which he connected himself, to assume among them the rank and functions of a public teacher; and as he looked upon the persons who made this proposal to be exempt from the fanatical phrenzy of their brethren at Munster (though according to other accounts they were originally of the same stamp, only rendered somewhat wiser by their sufferings), he yielded to their intreaties. From this period to the end of his life, he travelled from one country

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country to another with his wife and children exercising his ministry, under pressures and calamities of various kinds, that succeeded each other without interruption, and constantly exposed to the danger of falling a victim to the severity of the laws. East and West Friesland, together with the province of Groningen, were first visited by this zealous apostle of the Anabaptists; from whence he directed his course into Holland, Gelderland, Brabant, and Westphalia, continued it through the German provinces that lie on the coasts of the Baltic Sea, and penetrated so far as Livonia. In all these places his ministerial labours were attended with remarkable success, and added to his sect a prodigious number of followers. Hence he is deservedly considered as the common chief of almost all the *Anabaptists*, and the parent of the sect that still subsists under that denomination. Menno was a man of genius, undirected by a very sound judgment; he possessed a natural and persuasive eloquence, and such a degree of learning as made him pass for an oracle in the estimation of the multitude. He appears, moreover, to have been a man of probity, of a meek and tractable spirit, gentle in his manners, pliable and obsequious in his commerce with persons of all ranks and characters, and extremely zealous in promoting practical religion and virtue, which he recommended by his example as well as by his precepts. The plan of doctrine and discipline drawn up by Menno was of a much more mild and moderate nature than that of the furious and fanatical ANABAPTISTS, whose tumultuous proceedings have been recited under that article, but somewhat more severe though more clear and consistent than the doctrine of the wiser branches of that sect, who aimed at nothing more than the restoration of the Christian church to its primitive purity. Accordingly he condemned the plan of ecclesiastical discipline that was founded on the prospect of a new kingdom, to be miraculously established by Jesus Christ on the ruins of civil government and the destruction of human rulers, and which had been the fatal and pestilential source of such dreadful commotions, such execrable rebellions, and such enormous crimes. He declared publicly his dislike of that doctrine, which pointed out the approach of a marvellous reformation in the church by the means of a new and extraordinary effusion of the Holy Spirit. He expressed his abhorrence of the licentious tenets, which several of the Anabaptists had maintained, with respect to the lawfulness of polygamy and divorce; and finally, considered as unworthy of toleration those fanatics who were of opinion that the Holy Ghost continued to descend into the minds of many chosen believers, in as extraordinary a manner as he did at the first establishment of the Christian church, and that he testified this peculiar presence to several of the faithful by miracles, predictions, dreams, and visions of various kinds. He retained indeed the doctrines commonly received among the Anabaptists, in relation to the baptism of infants, the *millennium*, or 1000 years reign of Christ upon earth, the exclusion of magistrates from the Christian church, the abolition of war, and the prohibition of oaths enjoined by our Saviour, and the vanity as well as the pernicious effects of human science. But while Menno retained these doctrines in a gene-

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ral sense, he explained and modified them in such a manner as made them resemble the religious tenets that were universally received in the Protestant churches; and this rendered them agreeable to many, and made them appear inoffensive even to numbers who had no inclination to embrace them. It however so happened, that the nature of the doctrines considered in themselves, the eloquence, of Menno which set them off to such advantage, and the circumstances of the times, gave a high degree of credit to the religious system of this famous teacher among the Anabaptists, so that it made a rapid progress in that sect. And thus it was in consequence of the ministry at Menno, that the different sorts of Anabaptists agreed together in excluding from their communion the fanatics that dishonoured it, and in renouncing all tenets that were detrimental to the authority of civil government, and by an unexpected coalition formed themselves into one community.

Though the Mennonites usually pass for a sect of Anabaptists, yet M. Herman Schyn, a Mennonite minister, who has published their history and apology, maintains, that they are not Anabaptists either in principle or by origin. However, nothing can be more certain than this fact, viz. that the first Mennonite congregations were composed of the different sorts of Anabaptists, of those who had been always inoffensive and upright, and of those who, before their conversion by the ministry of Menno, had been seditious fanatics: besides it is alledged, that the Mennonites do actually retain, at this day, some of those opinions and doctrines, which led the seditious and turbulent Anabaptists of old to the commission of so many and such enormous crimes: such particularly is the doctrine concerning the nature of Christ's kingdom, or of the church of the New Testament, though modified in such a manner as to have lost its noxious qualities, and to be no longer pernicious in its influence.

The Mennonites are subdivided into several sects; whereof the two principal are the *Flandrians* or *FLEMINGIANS*, and the *WATERLANDIANS*. The opinions, says Mosheim, that are held in common by the Mennonites, seem to be all derived from this fundamental principle, that the kingdom which Christ established upon earth is a visible church or community, into which the holy and just alone are to be admitted, and which is consequently exempt from all those institutions and rules of discipline that have been invented by human wisdom, for the correction and reformation of the wicked. This principle, indeed, was avowed by the ancient Mennonites, but it is now almost wholly renounced: nevertheless, from this ancient doctrine, many of the religious opinions that distinguish the Mennonites from all other Christian communities, seem to be derived: in consequence of this doctrine, they admit none to the sacrament of baptism but persons that are come to the full use of their reason; they neither admit civil rulers into their communion, nor allow any of their members to perform the functions of magistracy; they deny the lawfulness of repelling force by force, and consider war, in all its shapes, as unchristian and unjust; they entertain the utmost aversion to the execution of justice, and more especially

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especially to capital punishments; and they also refuse to confirm their testimony by an oath. The particular sentiments that divided the more considerable societies of the Mennonites are the following: The rigid Mennonites, called the *Flemingians*, maintain, with various degrees of rigour, the opinions of their founder Menno, as to the human nature of Christ, alledging that it was produced in the womb of the Virgin by the creating power of the holy Ghost; the obligation that binds us to wash the feet of strangers, in consequence of our Saviour's command; the necessity of excommunicating and avoiding, as one would do the plague, not only avowed sinners, but also all those who depart, even in some light instances pertaining to dress, &c. from the simplicity of their ancestors; the contempt due to human learning, and other matters of less moment. However this austere system declines, and the rigid Mennonites are gradually approaching towards the opinions and discipline of the more moderate or *Walterlandians*.

The first settlement of the Mennonites, in the United Provinces, was granted them by William prince of Orange, towards the close of the 16th century; but it was not before the following century that their liberty and tranquillity were fixed upon solid foundations, when, by a confession of faith published in the year 1626, they cleared themselves from the imputations of those pernicious and detestable errors that had been laid to their charge. In order to appease their intestine discords, a considerable part of the Anabaptists of Flanders, Germany, and Friesland, concluded their debates in a conference held at Amsterdam, in the year 1630, and entered into the bonds of fraternal communion, each reserving to themselves a liberty of retaining certain opinions. This association was renewed and confirmed by new resolutions, in the year 1649; in consequence of which the rigorous laws of Menno and his successors were, in various respects, mitigated and corrected.

MENOCHIUS, vulgarly MENOCHIA, (James), a famous lawyer, meanly born at Pavia, but who became so skilful in the law, that he was called the *Baldus* and *Bartholus* of his age; all the princes of Italy soliciting him to their universities. He read at Padua 23 years together; and for love of his country removed to Pavia, and succeeded Nicholas Gratiani. He hath got an immortal fame by his works, *De recuperanda possessione*; *De adipiscenda possessione*; *De presumptionibus*; *De arbitrariis Judicium questionibus & causis conciliorum*, tom. 13. &c. He died in 1607, aged 75.

MENOLOGY, MENOLOGIUM, (from *μην*, month, and *λογος*, discourse), in much the same as martyrology, or callendar, in the Latin.

The Greek menologium is divided into the several months in the year; and contains an abridgement of the lives of the saints, with a bare commemoration of the names of such whose lives were never written. The Greeks have various menologies; and the Romans tax them with inserting divers heretics in their menologies as saints.—Baillet treats of them at large.

MENSA, in law-books, a term that includes in it all patrimony, and necessaries for livelihood.

MENSALS, MENSALIA, in church-history, such livings as were formerly united to the tables of religi-

ous houses, and hence called *mensal benefices*. See the article BENEFICE. Menses.

MENSES, CATAMENIA, in medicine, the monthly evacuations from the uterus of women not with child or not giving suck. They are so called from *mensis* "month," the period wherein they return. They are also called *flowers*, *courses*, &c. By the Jewish law a woman was unclean while the menstrual blood flowed; and the man who touched her, or the moveables she had touched, was declared unclean.—Levit. xv.

The menses make one of the most curious and difficult phenomena in the whole human body; for the explanation whereof, many hypotheses have been framed, though the matter is yet scarcely ascertained.

It is generally agreed by all, that the necessity women are under for some extraordinary supply to compensate the expence, and support them during the time of gestation, was the final reason why this redundancy at other times was given them, which continues whilst this necessity subsists, and ceases when, according to the constitution of the female frame, it is no longer required; but this is all they agree in. Some, not content with this occasion alone, will have the menstruous blood offend in quality more than quantity; which they argue from the pain it gives many women in the evacuation; with many other idle notions.

Others ascribe this effect to an imaginary dominion of the moon over the bodies of women. This was formerly the prevailing opinion; though the smallest reflection would have shown the weakness of it: for, had this purgation been owing to the influence of the moon, all women of the same age and temperament would have found it at the same periods and revolutions of the moon, *i. e.* at the same time; which all experience shows to be false.

There are two other opinions which carry with them great probability, and are argued with a great deal of strength and reason; in both which, the quality of the blood is allowed to be innocent, but they still differ about the reason of its issue. The former is that of Dr Bohn and Dr Freind, who maintain this flux to be the result of a plethora or plenitude; and to be evacuated only for relief against the quantity.

Dr Freind, who has maintained the cause of a plethora with the greatest strength and clearness, supposes, that this plethora arises from a coacervation in the blood-vessels of a superfluity of aliment, which, he thinks, remains over and above what is expended by the ordinary ways; and that women have this plethora, and not men, because their bodies are more humid, and their vessels, especially the extremities of them, more tender, and their manner of living generally more inactive than that of men; and that these things concurring, are the occasion that women do not perspire sufficiently to carry off the superfluous alimentary parts, till they be accumulated in such quantities as to distend the vessels, and force their way thro' the capillary arteries of the uterus. It is supposed to happen to women more than the females of other species, which have the same parts, because of the erect posture of the former, and the

Menses.

the vagina and other canals being perpendicular to the horizon; so that the pressure of the blood is directed towards their orifices: whereas in brutes, they are parallel to the horizon, and the pressure wholly is on the sides of those vessels. The discharge, he thinks, happens in this part rather than in any other, as being more favoured by the structure of the vessels; the arteries being very numerous, and the veins sinous and winding, and therefore more apt to retard the impetus of the blood; and consequently, in a plethoric case, to occasion the rupture of the extremities of the vessels, which may last, till, by a sufficient discharge, the vessels are eased of their overload.

This is the substance of Dr Freind's theory; from whence he very mechanically and very philosophically accounts for the symptoms.

To his argument, why women have menses rather than men, we may add from Boerhaave, that, in the former, the *os sacrum* is wider, and stands farther out, and the *os coccygis* farther in; the *ossa innominata* wider, and farther apart, and the lowest of them, as well as the lower eminences of the *os pubis*, farther outwards than in the latter. Hence, in women, the latitude or expansion about these bones, and the capacity of the *pelvis*, is vastly great in proportion to those of men; and yet, in a woman not pregnant, there is not much to fill this expanse. Again, the foreside of the thorax is smoother in women than in men, and the blood-vessels, lymphatics, adipose, and nervous vessels, membranes, and fibres, are much laxer in women than in men: whence all their cavities, cells, vessels, &c. are more easily replenished, and the humours aggregated in them; besides, that they are found to perspire less than men, and to arrive much sooner at their maturity, or *ακμή* of increase. To which he adds the consideration of the soft pulpy texture of the uterus, and the vast number of veins and arteries with which it is filled. Hence a healthy maid, being arrived at her growth, begins to prepare more nutriment than is required for the support of the body; which, as there is not to be any farther accretion, must of necessity fill the vessels, and especially those of the uterus and breasts, they being the least compressed. These will be dilated more than the others; whence the lateral vascules evacuating their humour into the cavity of the uterus, it will be filled and extended. Hence a pain, heat, and heaviness, will be felt about the loins, pubes, &c. the vessels of the uterus, at the same time, will be so dilated as to emit blood into the cavity of the uterus, and its mouth will be lubricated and loosened, and blood issue out. As the quantity of blood is diminished, the vessels will be less pressed, and will contract themselves again closer, so as again to retain the blood, and let pass the grosser part of the serum; till at length only the usual serum passes. Again, there are more humours prepared, which are more easily lodged in vessels once dilated; and hence the menses go and return at various periods in various persons.

This hypothesis, however plausible, is opposed by Dr Drake, who maintains, that there is no such repletion, or at least that it is not necessary to menstruation; arguing, that, if the menses were owing to a plethora so accumulated, the symptoms would arise

Menses.

gradually, and the heaviness, stiffness, and inactivity, necessary symptoms of a plethora, would be felt long before the periods were completed, and women would begin to be heavy and indisposed soon after evacuation, and the symptoms would increase daily; which is contrary to all experience, many women, who have them regularly and easily, having no warning, nor any other rule to prevent an indecent surprise, than the measure of the time; in which, some that have slipped, have been put to confusion and shifts no ways consistent with the notice a plethoric body would give. He adds, that even in those who are difficultly purged this way, the symptoms, though very vexatious and tedious, do not make such regular approaches as a gradual accumulation necessarily requires. If we consider what violent symptoms come on in an hour, we shall be extremely puzzled to find the mighty accession of matter, which should, in an hour or a day's time, make such great alterations. According to the hypothesis, the last hour contributed no more than the first; and of consequence, the alteration should not be greater in the one than in the other, setting aside the bare eruption.

This is the substance of what is argued against Dr Freind's theory; which, it must be owned, notwithstanding these objections, is still the most rational and consistent that has yet been advanced.

Those who oppose it, give into the doctrine of fermentation, and maintain the evacuation of blood in those parts to be an effect of an effervescence or ebullition of the blood. This opinion has been maintained by many, particularly by Dr Charleton, Bale, De Graaf, and Drake; the two first of whom suppose a ferment peculiar to the women, which produces this flux, and affects that part only, or at least principally. Dr Graaf, less particular in his notion, only supposes an effervescence of the blood, raised by some ferment, without assigning how it acts, or what it is. The sudden turgescence of the blood occasioned them all to think, that it arose from something till then extraneous to the blood, and led them to the parts principally affected to seek for an imaginary ferment, which no anatomical inquiry could ever show, or find any receptacle for, nor any reasoning necessarily infer. Again, that heat which frequently accompanies this turgescence, led them to think the case more than a plethora, and that there was some extraordinary intestine motion at that time.

Dr Drake improves on the doctrine of a ferment; and contends, not only that it is necessary there should be a ferment, but a receptacle also for this ferment; concluding, from the suddenness and violence of the symptoms, that a great quantity must be conveyed into the blood in a short time, and consequently, that it must have been ready gathered in some receptacle, where, while it was lodged, its action was restrained. But he goes farther still, and pretends to ascertain the place, &c. both of the one and the other, making the gall-bladder to be the receptacle, and the bile the ferment. This liquor he thinks well adapted to raise a fermentation in the blood, when discharged into it in a quantity; and, as it is contained in a receptacle that does not admit of a continual issue, it may be there reserved, till in a certain period of time

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the bladder becoming turgid and full, through the compression of the incumbent viscera, it emits the gall; which, by the way of the lacteals, insinuating itself into the blood, may raise that effervescence which occasions the aperture of the uterine arteries. To confirm this, he alledges, that persons of a bilious constitution have the menses either more plentifully, or more frequently, than others; and that distempers manifestly bilious, are attended with symptoms resembling those of women labouring under difficult menstruation. — If it be objected, that on this principle men should have menses as well as women, he answers, that men do not abound in bile so much as women, the pores of the former being more open, and carrying off more of the serous part of the blood, which is the vehicle of all the other humours, and consequently a greater part of each is discharged through them than in women, wherein the superfluity must either continue to circulate with the blood, or be gathered into proper receptacles, which is the case in the bile. The same reason he gives why menstruation should not be in brutes: the pores of these being manifestly more open than those of women, as appears from the quantity of hair which they bear, for the vegetation whereof a large cavity, and a wider aperture of the glands, is necessary, than where no such thing is produced: yet there is some difference between the males and females even among these, some of the latter having their menses, though not so often, nor in the same form and quantity, as women.

He adds, that the several phenomena of the menses, whether in a natural, a regular, or diseased case, flow naturally and readily from this hypothesis; and that whatever may be accounted for from a plethora, or from any particular ferment, may without any straining be applied to this.

Females generally begin to menstruate about the age of fourteen or fifteen, and cease about fifty; though instances have occurred of their commencing sooner and continuing longer. There are, therefore, two critical periods in the lives of females which require their particular attention. In order to escape the chlorosis, and other similar diseases, incident to that period of life when the menses commence, they should avoid indolence and inactivity, and accustom themselves to exercise in the open air as much as possible. Unwholesome food, dulness of disposition, and strait cloaths, are very injurious to females at this season. The discharge in the beginning is seldom so instantaneous as to surprise them unawares. The eruption is generally preceded by symptoms that indicate its approach; such as a sense of heat, weight, and dull pain in the loins; distension and hardness of the breasts, head-ach, loss of appetite, lassitude, paleness of the countenance, and sometimes a slight degree of fever. When these symptoms occur, every thing should be carefully avoided which may obstruct the menstrual flux, and all means used to promote it; as sitting frequently over the steams of warm water, drinking warm diluting liquors, &c. When the menses have begun to flow, great care should be taken to avoid every thing that tends to obstruct them; such as fish, and all kinds of food that are hard of digestion, and cold acid liquors. Cold is likewise hurtful at this period; as also anger, fear, grief, and other affections of the mind. From

N^o 210.

whatever cause this flux is obstructed, except in the state of pregnancy, proper means should be used to restore it; and if exercise in a dry, open, and rather cool air, wholesome diet, generous liquors in a weak and languid state of the body, cheerful company, and amusement fail, recourse must be had to medicine. — When obstructions proceed from a weak relaxed state of the solids, such medicines as tend to promote digestion, to brace the solids, and assist the body in preparing good blood, ought to be used. See *MEDICINE-Index*.

When the menstrual flux is too great, the patient becomes weak, the colour pale, the appetite and digestion are bad, and œdematous swellings of the feet, dropsies, and consumptions, often ensue. This frequently happens to women about the age of forty-five or fifty, and is very difficult of cure. It may proceed from a sedentary life; a full diet, consisting chiefly of salted, high seasoned, or acrid food; the use of spirituous liquors; excessive fatigue; relaxation; a dissolved state of the blood; violent passions of the mind, &c. In order to restrain the flux, the patient should be kept easy both in body and mind. If it be very violent, she ought to lie in bed with her head low; to live upon a cool and slender diet, as veal or chicken-broths with bread, and to drink decoctions of nettle-roots or the greater comfrey. If these fail, recourse must be had to stronger astringents, &c. See *MEDICINE* n^o 246.

The discharge of the menses is interrupted naturally during pregnancy: but this is not always the case, because some have them three months, some six months, and some during the whole time of gestation, though in less quantity than at other times. The menses are mostly interrupted during the time of giving suck, though many women have a return about the third or fourth month after delivery, and almost all have them again in the ninth or tenth month. In cases of obstruction, the menstrual blood hath discharged itself by other outlets.

It usually happens that this periodical discharge ceases between the age of forty and fifty; and the season in which this takes place is critical to the sex. — However, those who survive this period without contracting any chronical disease, become more healthy and vigorous than they were before. About this time, some are afflicted with the well known symptoms of plethora, heat, flushings, restless nights, troublesome dreams, and unequal spirits; others are attacked with inflammations of the bowels, or other internal parts; spasmodic affections of various parts, stiffness in the limbs, swelled ancles, with pain and inflammation, the piles, and other effects of plenitude. Those of full plethoric habits, accustomed to copious evacuations, will find great relief by bleeding frequently in moderate quantities, keeping the bowels lax, moderating their diet, and using sufficient exercise that is not too heating. If an immoderate flux of the menses happens at this period, it should be restrained by gentle laxatives, cooling medicines, rest, anodynes, a most sparing not too liquid diet, rather than by very copious bleedings and astringents of any kind. Dr Fothergill observes, that various purgations of aloes, the tinctura sacra, pil. Ruffi, elixir proprietatis, and other compositions of this kind, are recommended as proper purgatives

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purgatives to be used on the cessation of the menses. But many inconveniences have arisen from these heating medicines, as the piles, strangury, immoderate discharges of the menses, racking pains in the loins, and other similar complaints. Rhubarb, senna, magnesia, sulphur medicines, small doses of jalap, and various combinations of these, may be substituted in the room of the others, and will supply sufficient variety to the prescriber and patient. When the menses are about to go off, they appear for the most part irregularly both in time and quantity; once in a fortnight, three, five, or six weeks; sometimes very sparingly, at other times in immoderate quantities. Great losses of this kind are often prevented by taking away four or five ounces of blood a few days after the first menstrual suppression. If a patient has in early life been subject to cutaneous eruptions, sore eyes, glandular swellings, or other obvious marks of morbid humours subsisting in the constitution, and all which may have disappeared about the time the menses became regular, an issue is an advisable drain, and may prevent many inconveniences. If at this time ulcerous sores break out about the ancles, or in other parts of the body, they ought to be continued open, or artificial drains substituted in their stead; for those who will have them dried up are soon after carried off by acute diseases, or fall into those of a chronic nature.

MENSORES, among the Romans, were harbingers, whose business it was to go before the emperor, and fix upon lodgings for him when he travelled into any of the provinces. They also marked out encampments, and assigned every regiment its post.

Mensores were also land-surveyors, architects, or appraisers of houses and public buildings. The distributors of provisions in the army were called *mensores frumentarii*. And mensores was also an appellation given to servants who waited at table.

MENSTRUAL, or MENSTRUOUS, a term in medicine, applied to the blood which flows from women in their ordinary monthly purgations. See MENSES.

MENSTRUUM, in chemistry, any body which in a fluid or subtilised state is capable of interposing its small parts betwixt the small parts of other bodies, so as to divide them subtilly, and form a new uniform compound of the two.

MENSURATION, in general, denotes the art or art of measuring lines, superficies, or solids. See GEOMETRY.

MENTHA, MINT, in botany: A genus of the gymnospermia order, belonging to the didynamia class of plants; and in the natural method ranking under the 42d order *Verticillata*. The corolla is nearly equal, and quadrisid, with one segment broader than the rest, and emarginated; the stamina are erect, standing asunder. There are many species; but not more than three are cultivated for use, namely, the viridis or common spearmint, the piperita or peppermint, and the pulegium or pennyroyal. All these are so well known as to need no description; and all of them are very easily propagated by cuttings, parting the roots, or by offsets.

Uses. For culinary purposes, the spearmint is preferable to the other two; but for medicine, the pep-

permint and pennyroyal have in some places almost entirely superseded it. A conserve of the leaves is very grateful, and the distilled waters both simple and spirituous are universally thought pleasant. The leaves are used in spring fallads; and the juice of them boiled up with sugar is formed into tablets. It has been imagined that cataplasms and fomentations of mint, would dissolve coagulations of milk in the breasts; but Dr Lewis says, that the curd of milk, digested in a strong infusion of mint, could not be perceived to be any otherwise affected than by common water: however, milk, in which mint-leaves were set to macerate, did not coagulate near so soon as an equal quantity of the same milk kept by itself. Dr Lewis says, that dry mint digested in rectified spirits of wine, gives out a tincture, which appears by day-light of a fine dark green, but by candle-light of a bright red colour. The fact is, that a small quantity of this tincture is green either by day-light or by candle-light, but a large quantity of it seems impervious to common day-light; however, when held betwixt the eye and a candle, or betwixt the eye and the sun, it appears red.

The virtues of mint are those of a warm stomachic and carminative: in loss of appetite, nausea, and continual retching to vomit, there are few simples of equal efficacy. In colicky pains, the gripes to which children are subject, henteries, and other immoderate fluxes, this plant frequently does good service. It likewise proves beneficial in many hysteric cases, and affords an useful cordial in languors and other weaknesses consequent upon delivery. The best preparation in these cases is a strong infusion of the dried herb in water (which is much superior to the green), or rather a tincture or extract prepared with rectified spirit. These possess the whole virtues of the mint; the essential oil and distilled water contain only the aromatic part; the expressed juice only the astringency and bitterness, together with the mucilaginous substance common to all vegetables. The peppermint is much more pungent than the others.

Pennyroyal has the same general characters with the mint, but is more acrid and less agreeable when taken into the stomach. It has long been held in great esteem, and not undeservedly, as an aperient and deobstruent, particularly in hysteric complaints and suppressions of the menses. For these purposes the distilled water is generally made use of, or, what is of equal efficacy, an infusion of the leaves. It is observable, that both water and rectified spirit extract the virtues of this herb by infusion, and likewise elevate the greatest part of them by distillation. The expressed juice, with a little sugar, is not a bad medicine in the chincough.

MENTOR (fab. hist.), a faithful friend of Ulysses; a son of Hercules; a king of Sidonia, who revolted against Artaxerxes Ochus, and afterwards was restored to favour by his treachery to his allies, &c. *Diod.* 16. An excellent artist in polishing cups and engraving flowers on them. *Plin.* 33. c. 11.—*Mart.* 9. ep. 6c. v. 16.

MENTZ, an archbishopric and electorate in Germany. It lies on the banks of the river Mayne, between the electorate of Triers on the west, the Palatinate on the south, Franconia on the east, and the Wetteraw

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Mentz.

Mentz.

on the north. It is about 60 miles in length from north-east to south-west, and about 50 in breadth. A considerable part of the elector's revenue arises from the toll on the Rhine and the Mayne, and from the tax on the excellent wines produced in this country. The chief towns of any trade are, 1. Mentz; (see the next article.) In its neighbourhood is Hockheim, so celebrated for good wines, that the best Rhenish is from thence called *old hock*. It is a pretty village, containing about 300 families; and belongs to the chapter of Mentz, the dean of which enjoys the revenue of it: in a good year he makes from twelve to fifteen thousand guilders of his wine. He and the Augustines of Mentz and Francfort have the exclusive enjoyment of the best Hockheimer wine, of which, in good years, a piece, consisting of 100 measures, sells for from 900 to 1000 guilders from the press. "This (says the Baron Riesbeck) is certainly one of the dearest wines in the world. Having a desire to taste it on the spot, we were obliged to pay a rix-dollar; it was, however, of the best vintage in this century, viz. that of 1766. Nor should we have had it, but for an advocate of Mentz, to whom the hostess meant to show favour. This was the first German wine I had met with which was entirely without any sour taste: it was quite a perfume to the tongue; whereas the other wine of Hockheim, let it be as good as it may, is not quite clear of vinegar; though for this also, if it has any age, you are forced to pay a guilder and a half." 2. Bingen is a pleasant town, which stands in the district called *Rhinégau*. This town, which, together with the toll on the Rhine, is worth about 30,000 guilders, belongs to the chapter of Mentz, is extremely beautiful, and contains about 4500 inhabitants. A great part of the corn which is carried into the Rhinégau from the neighbouring Palatinate, comes through this place, which, on the other hand, supplies the Palatinate with drugs, and various foreign commodities. This traffic alone would make the place very lively; but besides this, it has very fruitful vineyards. The hill, at the foot of which it lies, and one side of which is made by the gullet, through which the Nahe runs into the Rhine, forms another steep rock behind this gullet parallel to the Rhine and the golden Rudesheimer mountain; it therefore enjoys the same sun as this does, which makes the Rudesheimer wine that grows on it little inferior to the Rudesheimer. See RUDESHEIM. The rising grounds about it produce wines that are esteemed preferable to those of Baccharac, so much in vogue heretofore.— 3. Elfeld, five miles west from Mentz, is a strong fortified town, on the north-side of the Rhine, and the chief of the Rhinégau.—Here is Rudesheim, a place noted for the growth of the best wines in these parts. 4. Weisbaden lies between six and seven leagues from Francfort, and about five or six miles north of Mentz: it is the metropolis of a country belonging to the branch of Nassau-Saarbrak, and is famous for its mineral waters.

After the pope, there is no doubt but the archbishop of this place is the most considerable and richest prelate in the Christian world. According to Baron Riesbeck, the see is indebted for its increase of riches to St Boniface, who may be called, with great justice, the apostle of the Germans. It was this man, an Eng-

lishman by birth, who in the time of Charlemagne baptized Witikind and the other brave Saxons who had so long resisted baptism with their swords, and spread the empire of the vicar of Jesus Christ as far as the northern and eastern seas. He it was who introduced the Roman liturgy into Germany, and made the savage inhabitants abstain from eating horse's flesh. He raised the papal power to a higher pitch than it had been raised in any other country in Christendom; and, in recompence of his services, the pope made all the new-founded bishoprics in the north of Germany subject to the see of Mentz, which Boniface had chosen for his residence. The provinces, the most considerable in the whole papal dominions, all Swabia, Franconia, Bohemia, and almost all Saxony, with a part of Switzerland, Bavaria, and the upper Rhine, belong to this diocese. Though the reformation, and revenge of the kings of Bohemia, have lessened it one third, it still contains the archbishopric of Sprengel and eleven bishoprics, most of which are the most considerable of Germany, as Wurzburg, Paderborn, Hildesheim, Augsburg, &c. When the building of the papal monarchy was completed by Gregory VII. the archbishops of Mentz became powerful enough to be at the head of the empire. In the 13th and 14th centuries, they were so eminent as to be able to make emperors without any foreign assistance; and it was to one of them that the house of Hapsburg was indebted for its first elevation. Since the boundaries of the two powers have been more accurately ascertained, and the temporal has so much got the better of the spiritual, the power and influence of the archbishops of this place have of course been much reduced; still, however, they are possessed of very important prerogatives, which they might exert with much more efficacy than they do, were it not that various circumstances have rendered them too dependent on the emperors. They are still the speakers in the Electoral College, have the appointment of the diets under the emperors, and may order a re-examination of the proceedings of the imperial courts. These high privileges are, however, too much subject to the controul of the house of Austria; nor are their spiritual powers any longer what they once were. Their suffragan bishops have taken it into their heads that all bishops are alike as to power, and that the title of archbishop only intitles its possessor to the first place amongst brothers who are equal. The temporals, however, which are still annexed to this chair, make him who sits in it rich amends for the diminution of his spiritual and political splendor. Though he does not absolutely possess the largest, yet he certainly has the richest and most peopled domain of any ecclesiastical potentate in Germany. The country, it is true, does not contain more than 125 German miles square, whereas the archbishopric of Salzburg contains 240; but then Salzburg has only 250,000 inhabitants, whereas Mentz has 320,000. The natural riches of the territory of Mentz, and its advantageous situation, make a subject of Mentz much richer than one of Salzburg, the greatest part of which is only inhabited by herdsmen. In the territory of Mentz there are 40 cities; in that of Salzburg only seven. The tax on vessels which go down the Rhine of itself produces 60,000 guilders, or 6000*l.* a year, which is nearly

Mentz.

Mentz. nearly as much as all the mines of Saltzburg put together, excepting only the salt mine at Halle. The tax on wine, here and in the country round, produces the court above 100,000 guilders, or 10,000 l. a-year, in which sum we do not reckon the customs of the countries which lie at a greater distance. Upon the whole, the income of the present archbishop may be valued at 1,700,000 guilders, or 170,000 l.

If the lands of the elector lay all together, they would produce a sufficiency of corn and all the prime necessities of life; but as several parts of them lie wide asunder, the people are compelled to purchase a great deal from foreigners. The capital itself, as well as the adjacent Rhinegau, depends on the Palatinate for its corn, notwithstanding the great abundance of that and every other species of grain in its own possessions in Wetterau. The noblest production of the elector's territory on the Rhine is the wine, which is almost the only true Rhenish. Connoisseurs, indeed, allow the wines of Neirstein, Bacharach, and a very few other places out of this country, to be true Rhenish: but they do not give this name to the wines of the Palatinate, of Bardon, and of Alsatia. There is a great deal of wine made in the countries which lie on the south and west of the Rhine, at Laubenheim, Bodenheim, Budesheim, and Bingen; but the true Rhenish, that which inspires so many who are and so many who are not poets, comes only from the Rhinegau, which lies on the northern banks of the Rhine. See RHINEGAU.

The civil list of the archbishop (according to Baron Riefbeck), is by much too immoderate and expensive. "He has his ministers, his counselors of state, and eighty or ninety privy counselors of various denominations. The expence of this establishment is very disproportionate to the revenue of the state. This is owing to the large number of poor nobility, who can only accept of employments of this kind. Ignorance of the true principles of government are the causes of this evil. The consequences are, that a great number of persons, who might be usefully employed, live in idleness. Even the military establishment of the country appears to me more calculated for the purpose of feeding a hungry nobility than for real use. At the accession of the present elector, though the whole army only consisted of 2200 men, there were six generals. The regular establishment paid for and supported by the country is 8000 men; but though there are only 2000 men kept up, the money expended for their support, particularly that given to numberless useless officers, might be made use of more for the benefit of the country. The army of the archbishop consists of a German guard of 50 men and 25 horses, a Swiss guard, a squadron of hussars of 130 men (the most useful troops, as they purge the land of robbers and murderers), a corps of artillery of 104 men, three regiments of infantry of 600 men each, and some companies belonging to the armies of Franconia and the Upper Palatinate. Of the fortifications of the capital we may say much the same as of the army. Were they, indeed, improved and kept up as they ought to be, they would vie with Luxemburg, and be the most powerful of all the barriers against France. It is true, that the nature of

the ground does not allow of a regular plan; but for single parts, I have seen no place of the same capabilities, where greater advantages have been taken of the ground for the erection of the several works. The beauty, as well as size of them, is indeed an object of great wonder; but though the circle of the Upper Rhine, and even the empire in general, has laid out great sums on the building these fortifications, parts of them are not finished, and parts of them are ready to fall to pieces. Their extent, indeed, would require a great army to man them. But this, as well as the maintaining and keeping them up, is evidently beyond the power of this court, or indeed of the whole circle of the Upper Rhine united. They are, therefore, also to be looked upon as one of the things which serve more for magnificence than real use."

MENTZ, a considerable town of Germany, in the circle of the Lower Rhine, and capital of the electorate of the same name, is situated on the Rhine near its confluence with the Mayne, 20 miles north-west of Worms, 15 west of Francfort, and 75 east of Triers, in E. Long. 8. 20. N. Lat. 49. 51. This city claims a right to the invention of the art of printing: (see *History of PRINTING*). Here is a very beautiful quay along the river, defended by several works well fortified with cannon. That part of the city which extends towards the river is most populous. The best vineyards for Rhenish wine being in this neighbourhood, Mentz has a flourishing trade in that commodity more particularly; and its commerce is the brisker, by reason that all the merchandize which passes up and down the Rhine stops in its harbour to change bottoms.

The northern part of the city, in which the archbishop resides, is full of very regular buildings. Here are three regular streets, called the *Blerchen*, which run parallel to each other from the banks of the Rhine to 600 yards within the city, and are cut almost regularly by very pretty cross streets. The archbishop's palace has a most commanding view of these streets, the Rhine, and the Rhinegau. There are also some good buildings in the old part of the city. The market of beasts is extremely well worth seeing; and you here and there meet with other agreeable spots. The market in the middle of the town, though not regular, is one of the prettiest places in Germany. The cathedral is well worth notice. It is an immense large old Gothic building, the spire of which was struck with lightning about 20 years ago, and entirely laid in ashes. As it was made of a forest of wood, it burned 14 hours before it was entirely consumed. To prevent these accidents for the future, the chapter had the present one built to the same height in stone, an undertaking which cost them 40,000 guilders or L. 4000. It is a great pity (Baron Riefbeck observes) that it is overloaded with small ornaments; and a still greater, that this wonderful edifice is so choaked up with shops and houses as to be hardly more than half visible. As, however, houses and shops are very dear in this part of the town, one cannot be very angry with the chapter for choosing rather to make the most of its ground, than to show off the church to the best advantage. The rent of a shop and a single room to live in is 150 guilders or L. 15 per annum in this part of the town.

Men's

There is hardly another church in Germany of the height and length of this cathedral; and the inside of it is decorated with several magnificent monuments of princes and other great personages. Besides the cathedral, the city of Mentz contains several other churches in the modern style, very well worth seeing. St Peter's, and the Jesuits church, though both too much loaded with ornament, are among this number. The church of the Augustines, of which the inhabitants of Mentz are so proud, is a master-piece of bad taste; but that of Ignatius, though little is said about it, would be a model of the antique, if here likewise there had not been too much ornament lavished. Upon the whole, the palaces of the noblesse want that noble simplicity which alone constitutes true beauty and magnificence. In another century the externals of the city will be quite changed. The late prince built a great deal, and the present has a taste for the same sort of expence. The monks and governors of hospitals also have been forced to rebuild their houses; so that when a few more streets are made broader and straighter, the whole will have no bad appearance. The inhabitants, who together with the garrison amount to 30,000, are a good kind of people, and, like all the catholics of Germany, make great account of a good table. Their faces are interesting, and they are not deficient either in wit or activity.

There are few cities in Germany besides Vienna which contain so rich and numerous a nobility as this does: there are some houses here which have estates of 100,000 guilders, or L. 10,000 a-year. The counts of Bassenheim, Schonborn, Stadion, Ingelheim, Elz, Ostein, and Walderdorf, and the lords of Dahlberg, Breitenbach, with some others, have incomes of from 30,000 to 100,000 guilders. Sixteen or eighteen houses have from 15,000 to 30,000 guilders annual revenue.—The nobility of this place are said to be some of the oldest and most untainted in Germany. There are amongst them many persons of extraordinary merit, who join uncommon knowledge to all the duties of active life. Upon the whole, they are far superior to the greater part of the German nobility. Their education, however, is still too stiff. The first minister of the court was refused admittance into their assemblies for not being sufficiently noble; and they think they degrade themselves by keeping company with bourgeois.

The clergy of this place are the richest in Germany. A canonry brings in 3500 Rhenish guilders in a moderate year. The canonry of the provost brings him in 40,000 guilders a-year; and each of the deaneries is worth 2600 guilders. The income of the chapter altogether amounts to 300,000 guilders. Though it is forbidden by the canons of the church for any one to have more than a single prebend, there is not an ecclesiastic in this place but what has three or four; so that there is hardly a man amongst them who has not at least 8000 guilders a-year. The last provost, a count of Elts, had prebends enough to procure him an income of 75,000 guilders. Exclusive of the cathedral, there are several other choirs in which the canonries bring in from 1200 to 1500 guilders a-year. To give an idea of the riches of the monasteries of this place, Baron Riesbeck informs us, that at the destruction of the Jesuits, their wine, which was reckoned to sell

extremely cheap, produced 120,000 rixdollars. A little while ago the elector abolished one Carthusian convent and two nunneries, in the holy cellars of which there was found wine for at least 500,000 rixdollars. "Notwithstanding this great wealth (continues our author), there is not a more regular clergy in all Germany. There is no diocese in which the regulations made by the council of Trent have been more strictly adhered to than they have here; the archbishops having made a particular point of it both at the time of the reformation and ever since. One thing which greatly contributes to keep up discipline is the not suffering any priest to remain in the country who has not fixed and stated duties, and a revenue annexed to them. Most of the irregularities in Bavaria, Austria, and other countries, arise from abbés who are obliged to subsist by their daily industry and any masses which they can pick up. These creatures are entirely unknown here. The theological tenets of this court are also much purer than those of any other ecclesiastical prince in Germany. I was pleased to see the Bible in the hands of so many common people, especially in the country. I was told that the reading of it was not forbidden in any part of the diocese; only persons were enjoined not to read it through, without the advice of their confessors. For a long time superstition has been hunted through its utmost recesses; and though it is not quite possible to get entirely clear of pilgrimages and wonder-working images, you will meet with no priest bold enough to exorcise or to preach such nonsense as we hear in the pulpits of other German churches."

Though the trade of this place has been constantly on the increase for these 18 or 20 years past, yet it is by no means what it ought to be from the situation and other advantages. The persons here who call themselves merchants, and who make any considerable figure, are in fact only brokers, who procure their livelihood at the expence of the country or territory round, or who act for the merchants of Franckfort. A few toy-shops, five or six druggists, and four or five manufacturers of tobacco, are all that can possibly be called traders. There is not a banker in the whole town; and yet this country enjoys the staple privilege, and commands by means of the Mayne, Necker, and Rhine, all the exports and imports of Alsatia, the Palatinate, Franconia, and a part of Suabia and Hesse, as far as the Netherlands. The port too is constantly filled with ships, but few of them contain any merchandize belonging to the inhabitants of the place.

MENTZEL (Christian), born at Furstenwall in the Mittel-mark, is celebrated for his skill in medicine and botany, in pursuit of which he travelled through many countries. He had correspondents in the most distant parts of the world. He died A. D. 1701, about the 79th year of his age. He was a member of the academy *des Curieux de la Nature*. His works are, 1. *Index nominum plantarum*, printed at Berlin in folio, 1696; and reprinted with additions in 1715, under the title of *Lexicon plantarum polyglotton universale*. 2. A Chronology of China, in German, printed at Berlin 1696 in 4to. The following manuscripts of his composition are preserved in the royal library at Berlin. 1. *Sur l'Histoire Naturelle du Brasil*, in four volumes folio.

Mentz,
Mentzel.

Menus *lio. 2. Sur les Fleurs et les Plantes du Japon*, with coloured plates, two vols folio.

MENZIKOFF. MENUS (anc. geog.), a river of Germany; now the *Maine*, rising in Franconia, and running from east to west into the Rhine at Mentz.

MENUTHIAS (anc. geog.), an island adjoining to the north-east of the promontory Prasum of Ethiopia beyond Egypt. Some take it to be *Madagascar*, or the island *St Laurence*. Isaac Vossius will have it to be *Zanzibar*; Madagascar being at a greater distance from the continent than the ancients ever failed to, whereas Menuthias was nearer: yet though Zanzibar be nearer the continent, it is however nearer the equator than Ptolemy's Menuthias, placed in south latitude $12\frac{1}{2}$ degrees.

MENYANTHES, MARSH-TREFOIL, or *Buckbean*: A genus of the monogynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 21st order, *Precia*. The corolla is hairy; the stigma bifid; the capsule unilocular. This plant grows wild in moist marshy places in many parts of Britain. It has three oval leaves standing together upon one pedicle, which issues from the root; their taste is very bitter, and somewhat nauseous. According to Mr Lightfoot, the flowers of this plant are so extremely beautiful, that nothing but their native soil could exclude it from a place in every garden. They grow in an elegant spike; are white, dashed with pink, and fringed internally with hairs. The Highlanders esteem an infusion or tea of the leaves as good to strengthen the stomach. According to Dr Withering, an infusion of the leaves is prescribed in rheumatisms and dropsies; a dram of them in powder purges and vomits, and is sometimes given to destroy worms. In a scarcity of hops, the plant is used in the north of Europe to bitter the ale. The powdered roots are sometimes used in Lapland instead of bread, but they are unpalatable. Some people say, that sheep will eat it, and that it cures them of the rot; but from the Upsal Experiments it appears, that though goats eat it, sheep sometimes will not. Cows, horses, and swine, refuse it.—Dr Lewis informs us, that it is an efficacious aperient and deobstruent; promotes the fluid secretions; and, if liberally taken, gently loosens the belly. It has of late gained great reputation in scorbutic and scrophulous disorders; and its good effects in those cases have been warranted by experience. Inveterate cutaneous diseases have been removed by an infusion of the leaves, drank to the quantity of a pint a-day, at proper intervals, and continued for some weeks. Boerhaave relates, that he was relieved of the gout by drinking the juice mixed with whey.

MENZIKOFF (Alexander), was originally an apprentice to a pastry-cook near the palace of Moscow; but by a fortunate circumstance was drawn from that situation in early life, and placed in the household of Peter the Great. Having made himself master of several languages, and being formed for war and for business, he first rendered himself agreeable, and afterwards became necessary, to his master. He assisted Peter in all his projects; and was rewarded for his services with the government of Ingria, the rank of prince, and the title of *major-general*. He signalized himself in Poland in 1708 and 1709; but in 1713 he

was accused of embezzling the public money, and confined in 300,000 crowns. The Czar remitted the fine; and having restored him to favour, gave him the command of an army in the Ukraine in 1719, and sent him as his ambassador into Poland in 1722. Constantly employed about the means of preserving his influence after the death of his master, who was then evidently on the decline, Menzikoff discovered the person to whom the Czar intended to leave the succession. The emperor was highly offended, and his penetration cost him the principality of Plescoff. Under the Czarina Katharine, however, he was higher in favour than ever; because, on the death of the Czar in 1725, he was active in bringing different parties in Russia to agree to her succession. This princess was not ungrateful. In appointing her son-in-law Peter II. to be her successor, she commanded him to marry the daughter of Menzikoff, and gave the Czar's sister to his son. The parties were actually betrothed; and Menzikoff was made duke of Cozel and grand steward to the Czar. But this summit of elevation was the prelude to his fall. The *Dolgoroukis*, favourites of the Czar, had influence enough to procure his banishment, together with that of his family, to one of his own estates at the distance of 250 leagues from Moscow. He had the imprudence to leave the capital with the splendor and magnificence of a governor going to take possession of his province. His enemies took advantage of this circumstance to inflame the indignation of the Czar. At some distance from Moscow he was overtaken by a detachment of soldiers. The officer who commanded them made him alight from his chariot, which he sent back to Moscow; and placed him and his whole family in covered waggons, to be conducted into Siberia, in the habit of peasants. When he arrived at the place of his destination, he was presented with cows and sheep big with young, and poultry, without knowing from whom he received the favour. His house was a simple cottage; and his employment was to cultivate the ground, or to superintend its cultivation. New causes of sorrow were added to the severities of exile. His wife died in the journey; he had the misfortune to lose one of his daughters by the small-pox; and his other two children were seized with the same disease, but recovered. He sunk under his misfortunes, November 2. 1729; and was buried beside his daughter, in a little chapel which he had built. His misfortunes had inspired him with sentiments of devotion, which, amid the splendor of his former situation, he had altogether neglected. His two surviving children enjoyed greater liberty after the death of their father. The officer permitted them to attend public worship on Sundays by turns. One day when his daughter was returning from the village, she heard herself accosted by a peasant from the window of a cottage, and, to her great surprise, recognised in this peasant the persecutor of her family, Dolgorouki; who, in his turn, had fallen a sacrifice to the intrigues of the court. She communicated this intelligence to her brother, who could not behold, without emotion, this new instance of the vanity and instability of honours and power. Young Menzikoff and his sister were soon after recalled to Moscow by the Czarina Ann; and left Dolgorouki in possession of their cottage. He was made

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made captain of the guards, and received the fifth part of his father's possessions. His sister was appointed maid of honour to the Empress, and afterwards married to great advantage.

MENZINI (Benedict), a celebrated Italian poet, born at Florence, was professor of eloquence at the college Della Sapienza at Rome, where he died in 1704. He wrote, 1. The art of poetry. 2. Satires, elegies, hymns, and the Lamentations of Jeremiah. 3. *Academia Tusculana*, a work in verse and prose, which passes for his masterpiece.

MEOTIS, or PALUS MEOTIS, a sea of Turkey, which divides Europe from Asia; extending from Crim Tartary to the mouth of the river Don or Tanais.

MEPHITIC, a name expressing any kind of noxious vapour; but generally applied to that species of vapour called *fixed air*. See AIR, FIXED AIR, GAS, &c.

MEPHITIS FANUM, a temple erected to the goddess Mephitis, near Lacus Amsancti; who was worshipped also at Cremona. Figuratively, *Mephitis* denotes a noisome or pestilential exhalation, (Virgil.)

MEQUINEZ, or MIQUINEZ, the northern capital of the Morocco empire, stands at the extremity of the province of Beni-Hassen, 80 leagues north from the city of Morocco (which is the southern imperial city), and 20 to the east of Salee and the ocean. Maknassa, its founder, built it first at the bottom of a valley; but Muley Ismael extended it considerably over the plain that lies to the west of the valley. It is surrounded with well cultivated fields and hills, adorned with gardens and olive plantations, and abundantly watered with rivulets. Accordingly, fruits and kitchen stuffs thrive here exceedingly, and even the superior urbanity of the inhabitants announces the temperature of the climate. The winter indeed is very inconvenient, on account of the dirtiness of the town, the streets not being paved, and the soil being slimy.

Mequinez is surrounded with walls; the palace itself is fortified with two bastions, on which formerly some small guns were mounted. Muley Ismael, and Muley Abdallah, often in this city resisted the efforts of the Brebes, the sworn enemies of their tyranny. To the west are seen some walls of circumvallation, six feet in height, which were probably mere intrenchments for the infantry; the attacks of the Brebes being only sudden and momentary inroads, which did not require long defence. There is at Mequinez, as well as at Morocco, a walled and guarded suburb for the Jews. The houses are neater here than at Morocco. The Jews here are more numerous; and they can turn their industry to greater account, because the Moors in this city are more polished, and (being nearer to Europe) more visited, than those in the southern parts. Near the Jewry, there is another inclosed and separate quarter, called the *Negro-town*. It was built by Muley Ismael, for the accommodation of those black families which composed his soldiery. This town is now uninhabited, as are all those destined for the same use through the rest of the empire.

At the south-east extremity of the city stands the palace of the emperor, which was built by Muley Ismael. The space occupied by this palace is very

great; it includes several gardens, elegantly disposed, and well watered. There is a large garden in the centre, surrounded by a vast and pretty regular gallery, resting on columns, which communicates with the apartments. Those of the women are very spacious, and have a communication with a large chamber which looks into the garden. As you pass from one apartment to another, you find at intervals regular courts paved with square pieces of black and white marble; in the middle of these courts is a marble basin, from the centre of which rises a *jet-d'eau*, and the water falls down into this basin. These fountains are numerous in the palace; they are useful for domestic purposes, and they serve for the ablutions, which the scruples of the Mahometans have exceedingly multiplied. The palaces of the Moorish kings are large, because they are composed only of one range of apartments; these are long and narrow, from 18 to 20 feet high; they have few ornaments, and receive the light by two large folding doors, which are opened more or less as occasion requires. The rooms are always lighted from a square court in the centre, which is generally encompassed with a colonade.

The Moors here are more courteous than those in the southern parts; they are civil to strangers, and invite them into their gardens, which are very neat. The women in this part of the empire are beautiful; they have a fair complexion, with fine black eyes, and white teeth. I have sometimes seen them taking the air on the terraces; they do not hide themselves from Europeans, but retire very quickly on the appearance of a Moor.

MERA-DE-ASTA, formerly a large town of Andalusia, seated on the river Guadaleta, between Arcos and Xeres de la Frontera; but now only a large heap of ruins. Here the Arabs conquered Roderick the last king of the Goths, and by that victory became masters of Spain in 713.

MERCATOR (Gerard), one of the most celebrated geographers of his time, was born at Ruremonde in 1512. He applied himself with such industry to geography and mathematics, that he is said to have frequently forgot to eat and drink. The emperor Charles V. had a particular esteem for him, and the duke of Juliers made him his cosmographer. He composed a chronology, some geographical tables, an Atlas, &c. engraving and colouring the maps himself. He died in 1594. His method of laying down charts is still used, and bears the name of *Mercator's charts*.

MERCATOR (Nicholas), an eminent mathematician in the 17th century, was born at Holstein in Denmark; and came to England about the time of the restoration, where he lived many years. He was fellow of the Royal Society; and endeavoured to reduce astrology to rational principles, as appeared from a MS. of his in the possession of William Jones, Esq. He published several works, particularly *Cosmographia*. He gave the quadrature of the hyperbole by an infinite series; which was the first appearance in the learned world of a series of this sort drawn from the particular nature of the curve, and that in a manner very new and abstracted.

MERCATOR'S Sailing, that performed by Mercator's chart. See NAVIGATION.

Mera-de-
Asta,
Mercator.

Mercato-
rum,
Merchant.

MERCATORUM FESTUM, was a festival kept by the Roman merchants on the 15th of May in honour of Mercury, who presided over merchandize. A sow was sacrificed on the occasion, and the people present sprinkled themselves with water fetched from the fountain called *aqua Mercurii*; the whole concluding with prayers to the god for the prosperity of trade.

MERCHANT, a person who buys and sells commodities in gross, or deals in exchanges; or that traffics in the way of commerce, either by importation or exportation. Formerly every one who was a buyer or seller in the retail way was called a *merchant*, as they still are both in France and Holland; but here shopkeepers, or those who attend fairs or markets, have lost that appellation.

Previous to a person's engaging in a general trade; and becoming an universal dealer, he ought to treasure up such a fund of useful knowledge as will enable him to carry it on with ease to himself, and without risking such losses as great ill-concerted undertakings would naturally expose him to. A merchant should therefore be acquainted with the following parts of commercial learning. 1. He should write properly and correctly. 2. Understand all the rules of arithmetic that have any relation to commerce. 3. Know how to keep books of double and single entry, as journals, a ledger, &c. 4. Be expert in the forms of invoices, accounts of sales, policies of insurance, charter-parties, bills of lading, and bills of exchange. 5. Know the agreement between the money, weights, and measures of all parts. 6. If he deals in silk, woollen, linen, or hair manufactures, he ought to know the places where the different sorts of merchandizes are manufactured, in what manner they are made, what are the materials of which they are composed, and from whence they come, the preparations of these materials before working up, and the places to which they are sent after their fabrication. 7. He ought to know the lengths and breadths which silk, woollen, or hair-stuffs, linen, cottons, fustains, &c. ought to have according to the several statutes and regulations of the places where they are manufactured, with their different prices, according to the times and seasons; and if he can add to his knowledge the different dyes and ingredients which form the various colours, it will not be useless. 8. If he confines his trade to that of oils, wines, &c. he ought to inform himself particularly of the appearances of the succeeding crops, in order to regulate his disposing of what he has on hand; and to learn as exactly as he can what they have produced when got in, for his direction in making the necessary purchases and engagements. 9. He ought to be acquainted with the sorts of merchandize found more in one country than another, those which are scarce, their different species and qualities, and the properest method for bringing them to a good market either by land or sea. 10. To know which are the merchandizes permitted or prohibited, as well on entering as going out of the kingdoms or states where they are made. 11. To be acquainted with the price of exchange, according to the course of different places, and what is the cause of its rise and fall. 12. To know the customs due on importation or exportation of merchandizes, according to the usage, the tariffs, and regulations, of the places to

which he trades. 13. To know the best manner of folding up, embalming, or tunning, the merchandizes for their preservation. 14. To understand the price and condition of freighting and insuring ships and merchandize. 15. To be acquainted with the goodness and value of all necessaries for the construction and repairs of shipping, the different manner of their building; what the wood, the masts, cordage, cannons, sails, and all requisites, may cost. 16. To know the wages commonly given to the captains, officers, and sailors, and the manner of engaging with them. 17. He ought to understand the foreign languages, or at least as many of them as he can attain to; these may be reduced to four, viz. the Spanish, which is used not only in Spain but on the coast of Africa, from the Canaries to the Cape of Good Hope: the Italian, which is understood on all the coasts of the Mediterranean, and in many parts of the Levant: the German, which is understood in almost all the northern countries; and the French, which is now become almost universally current. 18. He ought to be acquainted with the consular jurisdiction, with the laws, customs, and usages of the different countries he does or may trade to; and in general all the ordinances and regulations both at home and abroad that have any relation to commerce. 19. Though it is not necessary for a merchant to be very learned, it is proper that he should know something of history, particularly that of his own country; geography; hydrography, or the science of navigation; and that he be acquainted with the discoveries of the countries in which trade is established, in what manner it is settled, of the companies formed to support those establishments, and of the colonies they have sent out.

All these branches of knowledge are of great service to a merchant who carries on an extensive commerce; but if his trade and his views are more limited, his learning and knowledge may be so too: but a material requisite for forming a merchant is, his having on all occasions a strict regard to truth, and his avoiding fraud and deceit as corroding cankers that must inevitably destroy his reputation and fortune.

Trade is a thing of so universal a nature, that it is impossible for the laws of Britain, or of any other nation, to determine all the affairs relating to it: therefore all nations, as well as Great Britain, show a particular regard to the law-merchant, which is a law made by the merchants among themselves: however, merchants and other strangers are subject to the laws of the country in which they reside. Foreign merchants are to sell their merchandize at the port where they land, in gross, and not by retail; and they are allowed to be paid in gold or silver bullion, in foreign coin or jewels, which may be exported. If a difference arises between the king and any foreign state, the merchants of that state are allowed six months time to sell their effects and leave the kingdom; during which time they are to remain free and unmolested in their persons and goods. See the articles COMMERCE, and *Mercantile Law*.

MERCHET (MERCHETUM), a fine or composition paid by inferior tenants to the lord, for liberty to dispose of their daughters in marriage. No baron, or military tenant, could marry his sole daughter and heir, without such leave purchased from the king, *pro*

Merchant.
Merchet.

maritanda

maritanda filia. And many of our servile tenants could neither send their sons to school, nor give their daughters in marriage, without express leave from the superior lord. See Kennet's Glossary in *Maritagium*. See also MARCHET.

MERCIA, the name of one of the seven kingdoms founded in England by the Saxons. Though the latest formed, it was the largest of them all, and grew by degrees to be by far the most powerful. On the north it was bounded by the Humber and the Mersey, which separated it from the kingdom of Northumberland; on the east by the sea, and the territories of the East-Angles and Saxons; on the south by the river Thames; and on the west by the rivers Severn and Dee. It comprehended well nigh 17 of our modern counties, being equal in size to the province of Languedoc in France; very little, if at all, less than the kingdom of Arragon in Spain; and superior in size to that of Bohemia in Germany.

Penda is regarded as its first monarch; and the kingdom is thought to derive its name from the Saxon word *merc*, which signifies "a march, bound, or limit," because the other kingdoms bordered upon it on every side; and not from the river Mersey, as some would persuade us. Penda assumed the regal title A. D. 626, and was of the age of 50 at the time of his accession; after which he reigned near 30 years. He was of a most furious and turbulent temper, breaking at different times with almost all his neighbours, calling in the Britons to his assistance, and shedding more Saxon blood than had been hitherto spilled in all their intestine quarrels. He killed two kings of Northumberland, three of the East-Angles, and compelled Kenwall king of the West-Saxons to quit his dominions. He was at length slain, with most of the princes of his family, and a multitude of his subjects, in a battle fought not far from Leeds, by Oswy king of Northumberland. This battle, which the Saxon chronicle tells us was fought at Winwidfield, A. D. 655, made a great change in the Saxon affairs, which the unbridled fury of Penda had thrown into great confusion. He had the year before killed Anna king of the East-Angles in battle, whose brother Ethelred notwithstanding took part with Penda. On the other hand, Penda the eldest son of Penda, to whom his father had given the ancient kingdom of the Mid-Angles, had two years before married the natural daughter of King Oswy, and had been baptized at his court. At that time it should seem that Oswy and Penda were upon good terms; but after the latter had conquered the East-Angles, he resolved to turn his arms against the kingdom of Northumberland. Oswy by no means had provoked this rupture; on the contrary, Bede tells us that he offered large sums of money, and jewels of great value, to purchase peace: these offers being rejected, he was reduced to the necessity of deciding the quarrel by the sword. The river near which the battle was fought overflowing, there were more drowned than killed. Amongst these, as the Saxon chronicle says, there were 30 princes of the royal line, some of whom bore the title of *kings*; and also Ethelred king of the East-Angles, who fought on the side of Penda against his family and country.

His son Penda, who married the daughter of that
Nº 210.

conqueror, became a Christian, and was not long after murdered, as is said, by the malice of his mother. His brother Wolfher becoming king of Mercia, embraced in process of time the faith of the Gospel, and proved a very victorious and potent monarch; and is, with no fewer than seven of his immediate successors, commonly styled *king of the Anglo-Saxons*, though none of them are owned in that quality by the Saxon chronicle. But though possibly none of them might enjoy this honour, they were undoubtedly very puissant princes, maintaining great wars, and obtaining many advantages over the sovereigns of other Saxon states, and especially the East-Angles, whom they reduced. The extent of the Mercian territories was so ample as to admit, and so situated as to require, the constituting subordinate rulers in several provinces; to whom, especially if they were of the royal line, they gave the title of *kings*; which occasions some confusion in their history. Besides the establishing episcopal sees and convents, the Saxon monarchs took other methods for improving and adorning their dominions; and as Mercia was the largest, so these methods were most conspicuous therein. Coventry, as being situated in the centre, was usually, but not always, the royal residence. Penda, who was almost continually in a state of war, lived as his military operations directed, in some great town on the frontiers. Wolfher built a castle or fortified palace for his own residence, which bore his name.—Offa kept his court at Sutton Walls near Hereford.

In each of the provinces there resided a chief magistrate; and if he was of the royal blood, had usually the title of *king*. Penda, at the time he married Oswy's daughter, had the title of *king of Leicester*.—Ethelred made his brother Merowald king of Hereford; who, dying without issue, bequeathed it to his younger brother Mercelm. The like honours were sometimes conferred upon the princeesses; and hence, in Mercia especially, we occasionally read of *vice-queens*. By these means the laws were better executed, the obedience of the subjects more effectually secured, and the splendor of these residences constantly kept up and augmented.

At length, the crown devolving sometimes on minors and sometimes on weak princes, intestine factions also prevailing, the force of this hitherto mighty kingdom began sensibly to decline. This falling out in the days of Egbert, the most prudent as well as the most potent monarch of the West-Saxons, he took advantage of these circumstances; and having encouraged the East-Angles to make an attempt for the recovery of their independence, he, in a conjuncture every way favourable to his design, broke with the Mercians, and after a short war obliged them to submit. But this was not an absolute conquest, the kings of Mercia being allowed by him and his successors to retain their titles and dominions, till the invasion of the Danes put an end to their rule, when this kingdom had subsisted above 250 years; and when the Danes were afterwards expelled by the West-Saxons, it sunk into a province, or rather was divided into many.

MERCURIAL, something consisting of, or relating to, mercury.

MERCURIALIS (Jerom), an eminent Italian physician

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Encyclopaedia britannica or a dictionary of arts, sciences and
miscellaneous literature

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